LOCKWOOD CORPORATION
GERING, NEBRASKA

RCRA PART B POST CLOSURE PERMIT APPLICATION
WASTE ACID EVAPORATION POND
EPA ID NO. NED 044101442

SUBMITTED TO

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

PREPARED BY

Sorensen Environmental
1901 Bear Court
Fort Collins, CO 80525
(303) 482-5324

MAY 3, 1994

FEDERAL EXPRESS

USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL
PACKAGE
TRACKING NUMBER

1502937833

1502937833

1 Date 5/2/94

RECIPIENT'S COPY

From (Your Name) Please Print	Your Phone Number (Very Important)	2 To (Recipient's Name) Please Print	Recipient's Phone Number (Very Important)
PAUL SORENSEN	(303) 482-5324	WES BARTLEY	( )
Company	**Department/Floor No.**	**Company**	**Department/Floor No.**
SORENSEN ENVIRONMENTAL		U.S. EPA, REGION VII	
Street Address		**Exact Street Address** *(We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.)*	
1901 BEAR COURT		726 MINNESOTA AVE.	
City	**State** / **ZIP Required**	**City**	**State** / **ZIP Required**
FT. COLLINS	CO 80525	KANSAS CITY	KS 66101

YOUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)
PO# 1025

H *IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here*
Street Address
City State ZIP Required

3 *PAYMENT* 1 ☐ Bill Sender 2 ☐ Bill Recipient's FedEx Acct. No. 3 ☐ Bill 3rd Party FedEx Acct. No. 4 ☐ Bill Credit Card
5 ☒ Cash/Check

4 *SERVICES* (Check only one box)

Priority Overnight (Delivery by next business morning†)	Standard Overnight (Delivery by next business afternoon. No Saturday delivery†)
11 ☐ OTHER PACKAGING	51 ☒ OTHER PACKAGING
16 ☐ FEDEX LETTER*	56 ☐ FEDEX LETTER*
12 ☐ FEDEX PAK*	52 ☐ FEDEX PAK*
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE
Economy Two-Day (Delivery by second business day †)	**Government Overnight** (Restricted for authorized users only)
30 ☐ ECONOMY*	46 ☐ GOVT LETTER
	41 ☐ GOVT PACKAGE

* Economy Letter Rate not available. Minimum charge: One pound Economy rate.

Freight Service (for packages over 150 lbs.)
70 ☐ OVERNIGHT FREIGHT** 80 ☐ TWO-DAY FREIGHT**
(Confirmed reservation required)

† Delivery commitment may be later in some areas. **Declared Value Limit $500. Call for delivery schedule.

5 *DELIVERY AND SPECIAL HANDLING* (Check services required)

Weekday Service
1 ☐ HOLD AT FEDEX LOCATION WEEKDAY (Fill in Section H)
2 ☒ DELIVER WEEKDAY

Saturday Service
31 ☐ HOLD AT FEDEX LOCATION SATURDAY (Fill in Section H)
3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)
9 ☐ SATURDAY PICK-UP (Extra charge)

Special Handling
4 ☐ DANGEROUS GOODS (Extra charge)
6 ☐ DRY ICE Dangerous Goods Shipper's Declaration not required
Dry Ice, 9, UN 1845, ____ X ____ kg, 904 III
☐ DESCRIPTION
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

6 PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE (See right)
Total 1	Total 11	Total

DIM SHIPMENT (Chargeable Weight)
☐ ____ lbs.
L x W x H

Received At
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☒ Station

7 Release Signature:

Emp. No. Date
☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg. To Del. ☐ Chg. To Hold
Street Address
City State Zip
Received By: X
Date/Time Received FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE [illegible]
PART #137205 [illegible]
FORMAT #158
158

Date

ROUTING AND TRANSMITTAL SLIP

6-1-94

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. ~~Wes~~ Steve ~ either		
2. Paul or I will send this		
3. financial comments up to Stew for		
4. her to send on to Lockwood		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

Attached are the originals of the Post-closure cost estimate and the trust agreement. I have made copies for reviewing these documents.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Paul Woodard AARP	Phone No. 7779

SORENSEN ENVIRONMENTAL

1901 Bear Court
Fort Collins, CO 80525
Phone/FAX (303) 482-5324

May 2, 1994

Mr. Wes Bartley
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Subject: Lockwood Corporation
Post Closure Permit Application
Waste Acid Evaporation Pond
EPA ID. No. NED 044101442

Dear Mr. Bartley:

On behalf of Lockwood Corporation (Lockwood), Sorensen Environmental (SE) is pleased to submit two copies of the referenced RCRA Part B Post Closure Permit Application. The existing Post Closure permit remains in effect until October 30, 1994. In accordance with 40 CFR 270, Subpart B, this reapplication is submitted 180 days before the expiration date of the effective permit.

Analytical data presented herein demonstrate that no hazardous compounds are present in the groundwater associated with the waste acid evaporation pond in concentrations greater than limits established in 40 CFR 264.94. Moreover, it was previously concluded in the HWS report "Hydrogeologic Investigation and Remedial Action Plan" (provided in Appendix A) that "the naturally alkaline conditions at the site neutralize the acidic fluids within a short distance immobilizing the toxic metals." Accordingly, no impact to human health or the environment is likely in association with the closed waste acid evaporation pond.

Because of the existing benign conditions, Lockwood proposes that the following permit application requirements, stipulated in 40 CFR 270, Subpart B, be waived:

- Preparedness and Prevention requirements of 40 CFR 264 Subpart C;
- Contingency Plan and Emergency Procedures requirements of 40 CFR 264 Subpart D; and
- Corrective Action Plan requirements of 40 CFR 264 Subpart F.

Previous soil sampling at the solid waste management units (SWMUs) identified on the Lockwood facility, summarized in Section III and Appendix I of this permit application, indicate that no hazardous waste constituents were detected at levels exceeding EPA action levels for Corrective Actions under RCRA; or where no RCRA standard has been proposed, commonly used standards at CERCLA sites in Region VII. Accordingly, Lockwood proposes that future SWMU soil sampling requirements be waived.

Lockwood also requests that language be incorporated into the new Post Closure Permit stating that the closed waste acid evaporation pond poses no threat to human health or the environment. Lockwood is hindered in their normal operation by an implied hazardous condition that has been demonstrated to be nonexistent.

Appendix D is provided for the Lockwood Post Closure Plan. However, Lockwood could not locate a copy of that document. Appendix D is included to provide a spot for insertion of this document, if available.

If you have any questions regarding the enclosed submittal, or if you need additional information , please contact Paul Sorensen of SE at the above number.

Sincerely,

Paul Sorensen

Paul C. Sorensen, P.E.
President

enclosure

cc: Bob Jacobson

LOCKWOOD CORPORATION
GERING, NEBRASKA

RCRA PART B POST CLOSURE PERMIT APPLICATION
WASTE ACID EVAPORATION POND
EPA ID NO. NED 044101442

SUBMITTED TO

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

PREPARED BY

Sorensen Environmental
1901 Bear Court
Fort Collins, CO 80525
(303) 482-5324

MAY 3, 1994

LOCKWOOD CORPORATION
GERING, NEBRASKA

RCRA PART B POST CLOSURE PERMIT APPLICATION
WASTE ACID EVAPORATION POND
EPA ID NO. NED 044101442

SUBMITTED TO

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

PREPARED BY

Sorensen Environmental
1901 Bear Court
Fort Collins, CO 80525
(303) 482-5324

MAY 3, 1994

LOCKWOOD CORPORATION
Box 160 Gering, NE 69341
(308) 43605051

STATEMENT OF CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

ATTACHMENTS: Post Closure Permit Application
For Waste Acid Evaporation Pond
EPA ID. No. NED044101442
Submitted: May 3, 1994

_____
SIGNATURE

_____
NAME (typed)

_____
TITLE

_____
DATE

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LOCKWOOD CORPORATION
RCRA PART B POST CLOSURE PERMIT APPLICATION
WASTE ACID EVAPORATION POND
EPA ID. No. NED 044101442

Lockwood Corporation (Lockwood) currently operates under a Resource Conservation and Recovery Act (RCRA) Part B Hazardous Waste Post-Closure Permit. The United States Environmental Protection Agency (EPA) has issued the permit number NED044101442. The current permit remains effective until October 30, 1994. Reapplication for this permit is required, and filing of the permit reapplication must be done within 180 days prior to the expiration of the original permit. Lockwood retained Sorensen Environmental (SE) to complete permit application requirements and submit the permit application prior to May 3, 1994.

This permit reapplication is presented in three sections. Section I provides the Part B Permit Application; Section II is the Part A Permit Application; and Section III discusses the Solid Waste Management Units.

SECTION I

SECTION I - PART B PERMIT APPLICATION

1.0 FACILITY DESCRIPTION

Lockwood is engaged in the fabrication of agricultural related machinery, center-pivot irrigation systems, and steel truck bodies. The plant is located in the East 1/2 of the Southeast 1/4 of Section 1, T21N, R55W in Scottsbluff County, Nebraska.

The plant property is presently surrounded by agricultural land on the south and east sides, industrial property on the west side, and industrial and State Highway 92 on the north side. Figure 1 is a location map of the Lockwood facility showing contours, roads and highways, and it's location in relation to the town of Gering, Nebraska. Figure 1 is based on the USGS Scottsbluff South and Minatare Quadrangle maps. Figure 2 is a topographic map showing a distance of 1,000 feet around the facility at a scale of 1 inch equals 200 feet (HWS, 1989).

The company maintains a galvanizing process as part of its operations. In general, the waste being discharged from the galvanizing process consist of a 5% to 15% solution of waste sulfuric acid. At it's peak operation, the process discharged up to two (2) batches of waste acid per week, each batch having a volume of between 5,000 to 8,000 gallons. Prior to 1984, this waste acid was discharged to two evaporation ponds located southwest of the Galvanizing Building. The cells had bottom dimensions of about 100 ft x 90 ft and 100 ft x 100 ft. At an average liquid depth of 4 feet, the combined estimated capacity of the two cells was 684,000 gallons.

Construction records indicate that the north cell was constructed with a mixed soil and bentonite liner on the bottom and to an elevation of 3 feet above the bottom on the sloped interior surfaces of the dikes. It is assumed that the south cell was unlined since no records were available on this cell and test borings were unable to determine the presence of a liner.

The south cell was placed into service in November 1972 and received wastes until February of 1978 at which time the north cell was constructed and placed into operation. The north cell received wastes from this time until June, 1984, when discharges to the cell were stopped, as requested by Administrative Order. Since that time, acids have been filtered and recycled on site, with the remaining waste acid being shipped to licensed hazardous waste disposal sites.

In August 1984, a preliminary Hydrogeologic Investigation confirmed that a leakage occurred in the north cell due to erosion of the clay liner near the influent discharge pipe. Additional investigations defined the extent and severity of the leakage and, in September 1985, a Closure Plan was submitted to the Nebraska Department of Environmental Control outlining procedures and estimated costs for closure of the waste and evaporation ponds. A Post

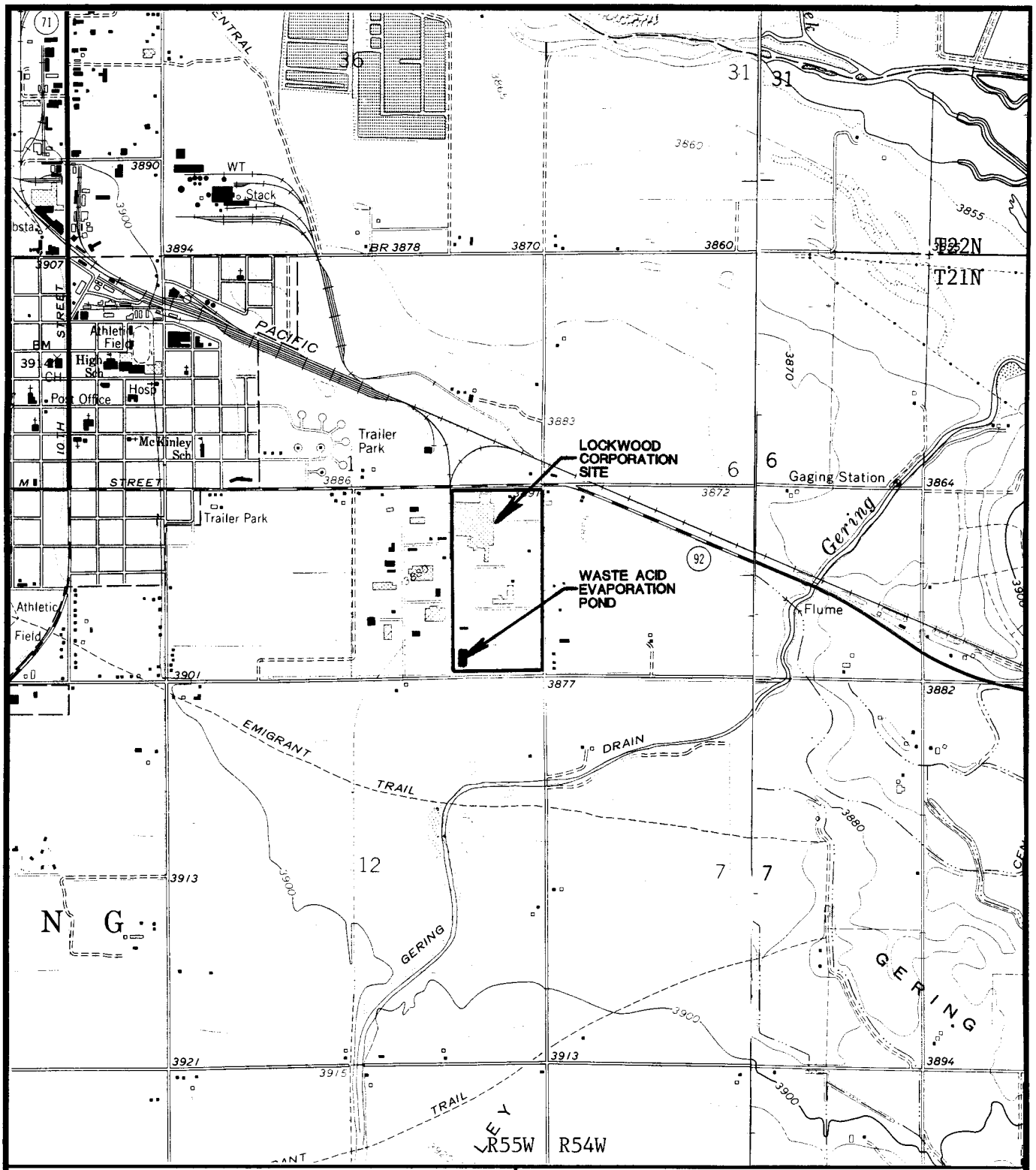


FIGURE 1
LOCATION MAP

LOCKWOOD CORPORATION
WASTE ACID EVAPORATION POND

SORENSEN ENVIRONMENTAL	PROJECT NO. H001-01-500	PREPARED BY:
	DATE: 4/22/94	REVIEWED BY: PCS

Closure Plan for the facility was also submitted to the NDEC in September 1985, identifying groundwater monitoring and maintenance activities which were to be carried out after closure.

In October 1985, eight monitoring wells and two monitoring/interceptor wells were constructed around the evaporation ponds. Groundwater samples from each of these wells (designated M-1 through M-8 on Figure 3) were tested regularly from November, 1985 until September, 1987. Semi-annual sampling has continued regularly since that time (with the exception of the fall, 1992 sampling event) for wells M-3, M-4, M-6, and M-7.

Closure of the evaporation ponds was performed in November, 1986. The work consisted primarily of pushing the exterior dikes into the center of the cells, thereby covering the contained sludge. Hydrated lime was then spread over the entire disturbed areas and covered with a 6" to 12" layer of compacted silty-clay soil. The soil was then covered with a final cover system consisting of a 20 mil thick PVC liner, 1 to 2 feet of compacted silty-clay soil, and 2 inches of a gravel stabilizing surface layer.

The site was enclosed in an 8-feet-high chain-link fence with proper signing.

WIND ROSE
FROM
CURRENTLY APPROVED AIRPORT LAYOUT PLAN
SCOTTS BLUFF COUNTY AIRPORT
3-25-88

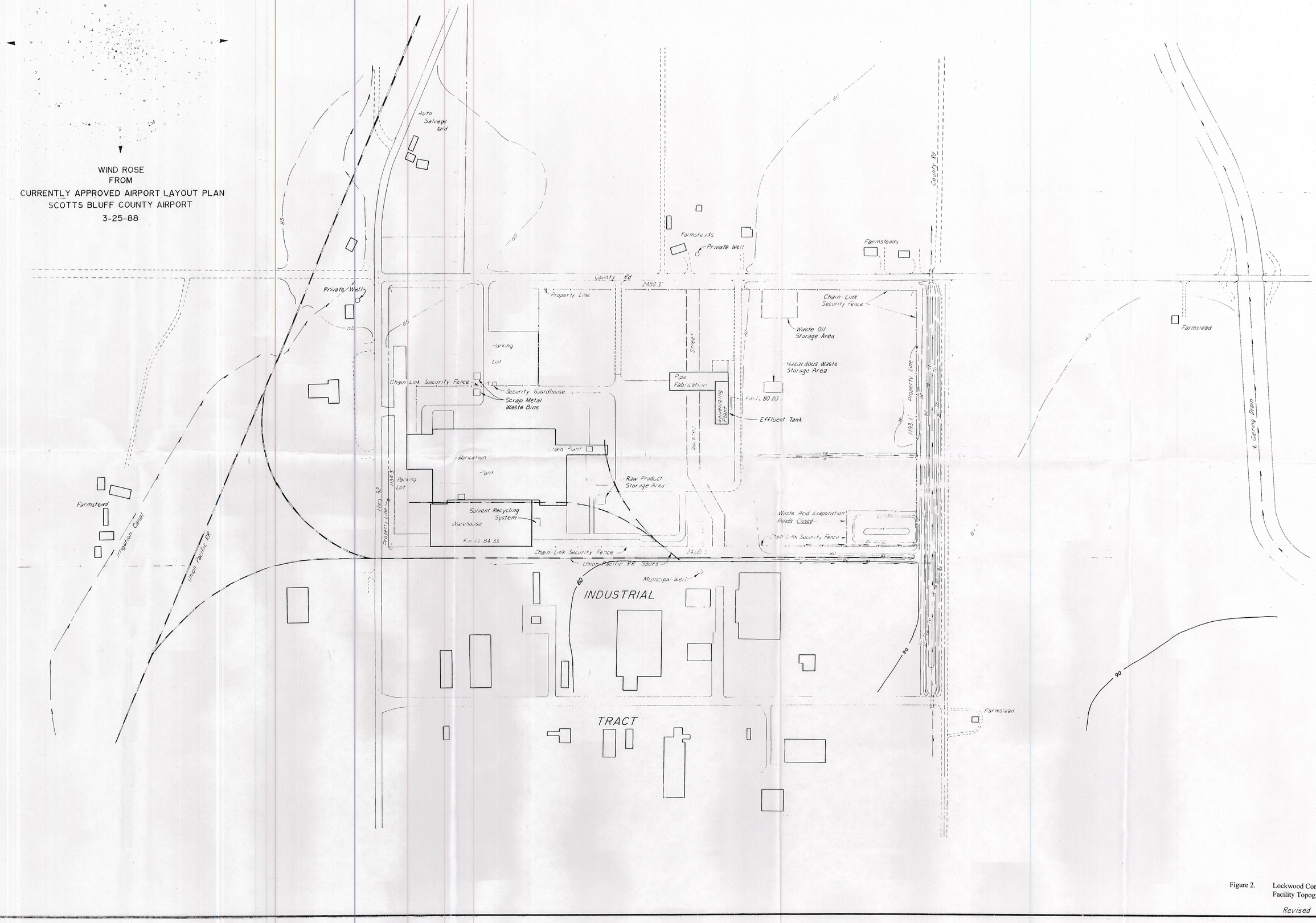


Figure 2. Lockwood Corporation
Facility Topographic Map

Revised 6-89

TOPO MAP

POST CLOSURE PERMIT
LOCKWOOD CORPORATION
GERING, NEBRASKA

825 J Street
P.O. Box 80358
Lincoln, NE 68501
Phone: (402) 475-4241
HWS Engineering Inc.

SCALE 1"=200'
DATE March 88
JOB NO 17/5002/01
FIELD BOOK 1529
FILE NO
SHEET NO 1/1

LOCKWOOD CORPORATION FACILITY LAYOUT

N

FENCING
RAILROAD TRACKS

GROUNDWATER MONITORING WELL LOCATIONS

BENCH MARK: CHISELED 'X' IN CENTER OF HEADWALL WEST SIDE OF TWIN CONC. BOX CULVERT
ELEV. 3879.78 U.S.G.S. DATUM

LEGEND

- □ = STORM DRAIN GATES
- → = DIRECTION OF FLOW
- = = UNDERGROUND STORM DRAINS
- — = SANITARY SEWER
- O FD = FLOOR DRAIN
- ═══ = OPEN STORM DRAIN DITCHES
- ◎ = GROUND WATER MONITORING WELLS
- O.F. = OUT FLOW

SCOTTSBLUFF

COUNTY ROAD

GERING NE HWY 92

OFFICE PARKING

OFFICE PARKING

PLANT PARKING

SALVAGE BUILDING

R.F. NO. 1
TOP CASING 80.16
GRD. 77.1

R.F. NO. 2
TOP CASING 79.88
GRD. 77.1

R.F. NO. 3
TOP CASING 81.39
GRD. 78.9

R.F. NO. 5
TOP CASING 87.48
GRD. 85.0

ELECTRICAL TRANSFORMERS

M.W. NO. LV-6
TOP CASING 75.85
GRD. BOTTOM PIT 75.3
GRD. TOP PIT 84.9

M.W. LV-7
TOP CASING 86.25
GRD. 84.3

M.W. NO. LV-4
TOP CASING 81.78
GRD. 79.2

ELECTRICAL TRANSFORMERS

M.W. LV-9
TOP CASING 88.69
GRD. 86.1

M.W. NO. LV-3
TOP CASING 87.79
GRD. 85.7

M.W. NO. LV-1
TOP CASING 88.00
GRD. 85.8

ELECTRICAL TRANSFORMERS

SHIPPING DOCKS

PAINT BOOTH
PAINT BOOTH
PAINT BOOTH
PAINT LINE
OVEN
OVEN
WASH

M.W. NO. LV-2
TOP CASING 87.58
GRD. 85.9

SHED

SOLVENT RECYLING & PAINT MIXING

HAZARDOUS WASTE STORAGE

R.F. NO. 4
TOP CASING 89.00
GRD. 86.1

M.W. NO. LV-5
TOP CASING 86.61
GRD. 84.6

CITY ELECTRIC SUBSTATION

M.W. NO. M-2
TOP CASING 79.89
GRD. 78.4

M.W. NO. M-4
TOP CASING 80.28
GRD. 78.80

M.W. M-1
TOP CASING 80.18
GRD. 78.6

M.W. M-5
TOP CASING 80.63
GRD. 79.2

M.W. NO MI-1
TOP CASING 79.11
GRD. 78.9

M.W. NO. M-3
TOP CASING 81.02
GRD. 79.5

M.W. NO. MI-2
TOP CASING 80.06
GRD. 78.8

M.W. NO. M-7
TOP CASING 80.46
GRD. 79.0

M.W. NO. M-6
TOP CASING 80.73
GRD. 78.9

RECEIVING DOCK

BM

ELECTRICAL TRANSFORMERS

UNION PACIFIC RAILROAD

M.W. NO. M-8
TOP CASING 81.45
GRD. 79.7

Figure 3. Monitor Well Locations
Waste Acid Evaporation Pond

2.0 WASTE ANALYSIS

The waste-acid evaporation pond was discontinued from service in June, 1984. Since that time considerable sampling and testing has been done on the pond sediments, underlying and surrounding soils, and the groundwater in the vicinity. Also, samples of the waste acid from the galvanizing plant were taken and analyzed. The results of the testing and a description of the methods and procedures used for sampling and testing are presented below.

2.1 Evaporation Pond Sediments, Clay Liner, Underlying Soils, and Adjacent Soil Borings

(This section is taken from the Post Closure Permit Application for Waste Acid Evaporation Pond, EPA I.D. No. NED 044101442, HWS Technologies, Inc., October, 1989). Samples of the pond sludges, clay liner and underlying soils were obtained between June 30 and July 12, 1984. Each of the cells was divided into four equal quadrants. A minimum of five (5) locations in each quadrant were selected at random for sample collection. At each of the selected locations, representative samples of each vertical foot of sludge from the top of the existing sludge to the bottom soil and sediment were collected.

In general, samples were obtained by hand excavating the top 1 to 2 feet of material where possible and then driving a modified "Shelby Tube" type core sampling device into the remaining depth of sludge. The tube was driven until the lower soil and sediments would seal or plug the end of the tube allowing for extraction from the hole.

In sample locations where sludges were extremely hard, the top 1 to 2 feet were hand excavated and then the remaining depth was sampled using a gas-driven power type continuous flight auger. All of the sample locations in the south cell (Cell No.1) were very hard and dry and the auger method was used.

The samples collected were dark brown, yellow, white to blue-green in color. Moisture concentrations for the samples varied from very dry and hard in the south cell to damp and wet in the north cell. The samples from each of the locations in each quadrant were then composited and analyzed.

Auger borings of soil surrounding the site were also obtained in June, 1984. These were conducted according to ASTM Designation D 1452065 (Revised 1980) and sampling was done by split-barrel sampler in conformance with ASTM Designation D 1586-67.

RCRA Chain of Custody requirements for sampling and transporting were followed for all soil samples taken from the evaporation pond and from the surrounding bore holes. Laboratory analysis of EP Toxicity and Total Metals were done according to standard methods.

Tables 1, 2, 3, 4, & 5 contain the analytical results from analysis of the waste acid, bore hole soil samples, and the evaporation pond soil samples (HWS Technologies, Inc., Post Closure Permit Application, October, 1989). These results were presented in the Supplemental Report to the Hydrogeologic Investigation, dated January 4, 1985.

2.2 Groundwater Monitoring

The original Hydrogeologic Investigation and Remedial Action Plan completed by HWS Technologies in 1984 (Appendix A), consisted, in part, of sampling and analysis of water from bore holes drilled at the waste-acid evaporation pond site. That report also addressed in detail the geology and hydrogeology of the site, including discussions of the aquifers being studied, the depth and quality of the groundwater, the speed and direction of movement of the groundwater, etc. As a recommendation of that report, eight monitoring wells were constructed in October 1985 as shown in Figure 2. These wells have been used to sample and analyze the groundwater on a regular basis since their installation. Table 6 summarizes the results of water analysis of all the wells from November 1985 to September 1987. At that time, the number of wells sampled was reduced to four Point of Compliance (POC) wells (M-3, M-4, M-6, and M-7). Table 7 summarizes the analytical results for the POC wells from March 1988 through the most current sampling event completed in March, 1994.

As specified in the 1989 Post Closure Permit (NED 044101442), Lockwood was required to conduct semi-annual sampling of the 4 POC wells for pH, specific conductance, total organic carbon, and total organic halogen. Additionally, a one-time sampling of the POC wells in September 1989 was required for VOCs (Method 624 screen), phenols, and total arsenic, barium, cadmium, fluoride, lead, mercury, nitrate-nitrogen, selenium, and silver, as well as the scheduled parameters. That sampling event was conducted, however available data suggest that analyses for fluoride, nitrate-nitrogen, and the VOC scan were not done.

Table 7 shows that none of the reported parameter concentrations exceed drinking water standard Maximum Contaminant Levels (MCLs). Only nonenforceable secondary MCLs (taste, odor, and appearance guidelines) are exceeded in wells M-3, M-4, and M-6 for total iron, total manganese, and sulfates, and in M-7 for total iron and sulfates. The total lead concentration of 0.02 mg/L reported in M-7 on September 25, 1989 exceeded the NDEQ action level of 0.015 mg.L. However, analysis of the March 11, 1994 sample indicated a total lead concentration of less than 0.015 mg/L in M-7.

HWS TECHNOLOGIES INC.
ANALYTICAL SERVICES
Telephone (402) 475-4241
825 J Street P.O. Box 80358 Lincoln, Nebraska 68501

DATE: June 6, 1986
AUTH.: 84/3937
REPORT NO.: 86702

FOR: Lockwood Corporation
Box 160, E. Hwy #92
Gering, Nebraska 69341

ATTN: Mr. Roy Dugan

1 cc. Roy Elliott, HWS
1 cc. Gary Brandt, HWS

JOB NUMBER: 86-2005

DATE RECEIVED: 3-8-86

CLIENT/FIELD IDENTIFICATION: None Given (Galv. Waste Sulfuric Acid)

LABORATORY IDENTIFICATION NO.: 20547

Analysis	Units	Concentration	Book/Page	Analyst
Physical Properties				
pH	S.U.	< 1	78/86013	RW
Nonfilterable Residue	mg/L	184	80/86008	RW
Metals, Total				
Cadmium	mg/L	20	10/86002	RW
Chromium	mg/L	< 0.05	12/86003	RW
Copper	mg/L	2.0	14/86001	RW
Lead	mg/L	28.0	24/86002	RW
Nickel	mg/L	1.00	23/86002	RW
Silver	mg/L	< 1	3/86001	RW
Zinc	mg/L	67,500	32/86004	RW
Organics				
Oil and Grease	mg/L	< 5	68/86006	SS

Analyses were performed in accordance with EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes.

By S A Smith

TABLE 1

SUMMARY OF EP TOXICITY ANALYSES
LOCKWOOD CORPORATION
SITE BORE HOLES

LAB I.D. No.		16801	16803	16804	16805	16806	16807	16818
Bore Hole I.D. (Depth, ft)		B1-A (9.0'-10.0')	B1-C (13.0'-14.0')	B1-D (15.5'-16.5')	B3-A (3.5'-4.0')	B3-B (10.5'-11.0')	B3-C (9.5'-20.0')	B5-D (10.0'-11.0')
Parameter	Unit	Concentration						
EP Toxicity Metals								
Arsenic	mg/l	<0.005	<0.055	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	mg/l	<0.005	<0.005	<0.005	0.010	0.030	0.040	<0.005
Chromium	mg/l	<0.05	<0.05	0.10	<0.05	0.07	0.05	<0.05
Lead	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Selenium	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	mg/l	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Zinc	mg/l	0.05	1.5	1.7	120	230	1200	2.9

LAB I.D. No.		16830	16836	17078	17079	17080	17081	17082	RCRA MAX. CONTAMINANT LEVEL
Bore Hole I.D. (Depth, ft)		B7-C (10.0'-11.0')	B8-C (7.5'-8.5')	B-12 (7.5'-26.0')	B-13 (7.5'-25.9')	B-14 (8.1'-28.0')	B-15 (4.8'-22.5')	B-16 (7.0'-18.0')	
Parameter	Unit	Concentration							
EP Toxicity Metals									
Arsenic	mg/l	<0.005	<0.005	Not Determined					5.0
Barium	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	100.0
Cadmium	mg/l	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	1.0
Chromium	mg/l	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	0.14	5.0
Lead	mg/l	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	5.0
Mercury	mg/l	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	0.2
Selenium	mg/l	<0.005	<0.005	<0.005	<0.005	0.025	0.005	<0.005	1.0
Silver	mg/l	0.1	0.1	Not Determined					5.0
Zinc	mg/l	2.3	0.19	0.05	0.04	0.05	0.03	0.04	------

TABLE 2

SUMMARY OF SELECTED TOTAL METALS ANALYSES
LOCKWOOD CORPORATION
SITE BORE HOLES

LAB I.D. No.		Concentration 17078	17079	17080	17081	17082
Bore Hole I.D. (Depth, ft)		B-12 (7.5'-26.0')	B-13 (7.5'-25.9')	B-14 (8.1'-28.0')	B-15 (4.8'-22.5')	B-16 (7.0'-18.0')
Parameter	Unit					
Cadmium	mg/l	0.005	0.007	<0.005	<0.005	<0.005
Chromium	mg/l	1.65	1.55	2.00	1.56	1.56
Chromium Hexavalent	mg/l	<0.05	0.12	0.15	0.05	<0.05
Lead	mg/l	2.04	2.98	2.38	2.32	1.93
Mercury	mg/l	0.011	<0.005	0.005	0.007	<0.005

TABLE 3

SUMMARY OF EP TOXICITY ANALYSES
LOCKWOOD CORPORATION
EVAPORATION PITS I & II

		Concentration Evaporation Pit I - Composites								Concentration Evaporation Pit II - Composites							
LAB I.D. No.		17005	17006	17007	17008	17009	17010	17011	17012	16793	16794	16795	16796	16797	16798	16799	PCRA MAX. PERMISSIBLE LIMITS
Parameter	Units																
Arsenic	mg/l	0.028	<0.005	0.024	0.006	0.015	0.041	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	5.0
Barium	mg/l	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	100.0
Cadmium	mg/l	0.015	0.015	0.008	0.005	0.025	0.015	0.010	0.025	0.035	0.020	0.030	0.020	0.025	0.015	0.030	1.0
Chromium	mg/l	<0.05	<0.05	0.10	<0.05	<0.05	<0.05	<0.05	0.13	0.20	<0.05	<0.05	0.08	0.12	<0.05	0.12	5.0
Lead	mg/l	<0.1	<0.1	0.24	0.24	<0.1	<0.1	0.12	3.8	1.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	5.0
Mercury	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.12	<0.005	<0.005	<0.005	<0.005	0.2
Selenium	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	1.0
Silver	mg/l	0.10	<0.1	<0.1	0.1	0.20	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	5.0
Zinc	mg/l	150	200	124	100	350	210	150	310	970	660	980	520	930	340	1300	---

* Description of Lab I.D. Nos - See Attached Page

TABLE 4

SUMMARY OF COMPOSITE SOURCES
LOCKWOOD EVAPORATION PIT #I

17005	17006	17007	17008	17009	17010	17011	17012
IA-1 (1'-2')	IA-15 (4'-5')	IB-1 (1'-2')	IB-15 (4'-5')	IC-1 (1'-2')	IC-15 (4'-5')	ID-1 (1'-2')	ID-15 (4'-5')
IA-2 (2'-3')	IA-5 (4'-5')	IB-2 (2'-3')	IB-4 (4'-5')	IC-2 (2'-3')	IC-4 (4'-5)	ID-2 (2'-3')	ID-4 (4'-5')
IA-3 (2'-3')		IB-3 (3'-4')	IB-5 (5'-6')	IC-3 (3'-4')	IC-5 (5'-6')	ID-3 (3'-4')	ID-5 (5'-6')
IA-4 (3'-4')		IB-11 (0'-1')		IC-11 (0'-1')		ID-11 (0'-1')	
IA-11 (0'-1')		IB-12 (1'-2')		IC-12 (1'-2')		ID-12 (1'-2')	
IA-12 (1'-2')		IB-13 (2'-3')		IC-13 (2'-3')		ID-13 (2'-3')	
IA-13 (2'-3')		IB-14 (3'-4')		IC-14 (3'-4')		ID-14 (3'-4')	
IA-14 (3'-4')							

LOCKWOOD EVAPORATION PIT #II

16793	16794	16795	16796	16797	16798	16799	16800
IIA-11 (0'-1')	IIA-15 (4'-5')	IIB-1 (0'-1')	IIB-5 (4'-5')	IIC-1 (0'-1')	IIC-5 (4'-5')	IID-1 (0'-1')	IID-5 (4'-5')
IIA-1 (0'-1')	IIA-5 (4'-5')	IIB-11 (0'-1')	IIB-15 (4'-5')	IIC-11 (0'-1')	IIC-15 (4'-5')	IID-11 (0'-1')	IID-15 (4'-5')
IIA-12 (1'-2')		IIB-2 (1'-2')		IIC-2 (1'-2')		IID-2 (1'-2')	
IIA-2 (1'-2')		IIB-12 (1'-2')		IIC-12 (1'-2')		IID-12 (1'-2')	
IIA-13 (2'-3')		IIB-3 (2'-3')		IIC-3 (2'-3')		IID-3 (2'-3')	
IIA-3 (2'-3')		IIB-13 (2'-3')		IIC-13 (2'-3')		IID-13 (2'-3')	
IIA-14 (3'-4')		IIB-4 (3'-4')		IIC-4 (3'-4')		IID-4 (3'-4')	
IIA-4 (3'-4')		IIB-14 (3'-4')		IIC-14 (3'-4')		IID-14 (3'-4')	

Table 5

Table 6

Lockwood Selected Groundwater Chemical Constituents and Parameters
(All Wells 11/7/85 through 9/28/87)

*** Indicates parameter that was not measured or not available.**

Date Sampled	Lab Desig.	Field Station	Water Temp (C) (fld)	pH (fld)	Spec. Cond. (um/cm) (fld)	Total Iron (mg/l)	Total Mang (mg/l)	Total Zinc (mg/l)	Sulfates (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Cadmium (mg/l)	Total Chromium (mg/l)	Total Lead (mg/l)	Total Mercury (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sodium (mg/l)	Nitrate-Nitrogen (mg/l)	Chloride (mg/l)	Phenol (ug/l)	Total Organic Carbon (mg/l)	Total Organic Halogen (ug/l as Cl)
EPA Interim Primary Drinking Water Standards										0.05	1.0	0.01	0.05	0.05	0.002	0.01	0.05						
7-Nov-85	20027	M-1	14.0	7.0	2800	5.20	2.50	0.387	1050	0.002	0.20	<0.005	<0.05	<0.10	<0.0002	<0.002	0.11	157	1.4	26.0	<0.05	5,4,4,4	18,22,22,19
25-Feb-86	20520	M-1	11.3	7.2	3800	5.70	2.20	0.491	915	0.004	0.50	<0.005	<0.05	<0.10	<0.0002	<0.002	0.08	167	*	25.0	<0.05	5	<20
10-Apr-86	20734	M-1	10.7	6.9	2600	9.16	1.65	0.380	920	*	*	<0.005	<0.01	<0.03	*	*	*	148	*	26.0	0.08	5	<50
29-Dec-86	21792	M-1	12.4	7.0	3250	6.50	1.60	0.410	1500	0.006	*	0.009	<0.05	<0.01	*	<0.002	0.02	157	2.2	29.0	<5	4	28
27-Mar-87	22071	M-1	10.1	7.0	3250	8.50	2.60	0.390	1500	0.004	*	0.010	<0.05	<0.01	*	<0.002	<0.01	127	3.8	25.5	<5	4	20
30-Jun-87	22447	M-1	*	7.1	3950	11.00	2.60	0.870	1300	0.004	*	<0.010	<0.05	<0.01	*	<0.002	<0.01	127	3.6	23.8	<5	59	17
28-Sep-87	22900	M-1	13.3	7.1	4100	9.50	2.40	0.340	1500	0.004	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	140	5.0	24.5	<2.0	4	19
[redacted]-85	20028	M-2	12.5	7.5	1580	0.03	<0.01	0.020	275	0.021	<0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	0.02	298	8.2	29.0	<0.05	5,5,6,5	21,23,19,24
25-Feb-86	20521	M-2	11.7	7.3	1400	0.82	2.10	0.825	300	0.024	0.14	<0.005	<0.05	<0.10	<0.0002	0.013	<0.01	240	*	30.0	<0.05	5	44
10-Apr-86	20735	M-2	11.5	7.3	1500	0.35	2.98	0.200	406	*	*	<0.005	<0.01	<0.03	*	*	*	229	*	31.0	*	*	*
29-Dec-86	21793	M-2	11.9	7.4	1600	0.10	0.25	0.070	320	0.019	*	0.005	<0.05	<0.01	*	<0.002	0.01	100	8.8	28.0	<5	5	38
27-Mar-87	22072	M-2	11.5	7.6	1250	<0.03	0.03	<0.010	290	0.027	*	0.006	<0.05	0.01	*	<0.002	<0.01	169	7.0	27.4	<5	4	26
30-Jun-87	22448	M-2	*	7.5	1750	0.10	0.06	0.050	220	0.023	*	<0.010	<0.05	<0.01	*	0.004	0.01	100	8.0	26.9	<5	80	38
28-Sep-87	22901	M-2	11.9	7.5	1600	0.33	0.01	<0.010	260	0.023	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	230	17.5	27.3	<2.0	4	22
7-Nov-85	20029	M-3	13.0	7.4	1780	1.52	0.42	0.173	430	0.006	0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	<0.01	233	5.0	23.0	<0.05	5,5,4,5	20,16,15,18
25-Feb-86	20522	M-3	12.3	7.5	1600	2.89	0.36	0.234	326	0.026	0.33	<0.005	<0.05	<0.10	<0.0002	0.007	<0.01	183	*	27.0	<0.05	5	<15
10-Apr-86	20736	M-3	11.4	7.3	1500	4.28	0.34	0.270	540	*	*	<0.005	<0.01	<0.03	*	*	*	178	*	27.0	*	*	*
29-Dec-86	21794	M-3	12.3	7.2	1900	1.80	0.25	0.160	520	0.031	*	0.006	<0.05	<0.01	*	<0.002	0.04	90	6.6	26.0	<5	4	23
30-Jun-87	22449	M-3	*	7.4	2000	1.60	0.30	1.400	430	0.015	*	<0.010	<0.05	<0.01	*	<0.002	<0.01	70	8.8	27.7	<5	71	28
27-Mar-87	22073	M-3	11.5	7.3	1650	1.81	0.32	<0.010	500	0.015	*	0.007	<0.05	<0.01	*	<0.002	<0.01	135	8.2	26.3	<5	4	16
28-Sep-87	22902	M-3	11.9	7.5	1800	4.00	0.34	0.150	440	0.013	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	180	7.2	27.7	<2.0	4	16
30-Mar-88	23685	M-3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5,5,5,5	16,15,16,16
[redacted]-Sep-88	24817	M-3	*	7.6	1600	2.20	0.30	*	310	*	*	*	*	*	*	*	*	144	*	32.0	<0.01	10	<10

Table 6 (Continued)

Date Sampled	Lab Desig.	Field Station	Water Temp (C) (fld)	pH (fld)	Spec. Cond. (um/cm) (fld)	Total Iron (mg/l)	Total Mang (mg/l)	Total Zinc (mg/l)	Sulfates (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Cadmium (mg/l)	Total Chromium (mg/l)	Total Lead (mg/l)	Total Mercury (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sodium (mg/l)	Nitrate-Nitrogen (mg/l)	Chloride (mg/l)	Phenol (ug/l)	Total Organic Carbon (mg/l)	Total Organic Halogen (ug/l as Cl)
EPA Interim Primary Drinking Water Standards										0.05	1.0	0.01	0.05	0.05	0.002	0.01	0.05						
4-Apr-89	26354	M-3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5	26
25-Sep-89	27619	M-3	12.3	7.1	1800	3.60	0.31	0.200	360	0.050	<0.10	<0.010	<0.05	<0.01	<0.0005	<0.005	0.01	205	*	29.0	<0.01	10,8,8,9	18,18,15,14
27-Mar-90	30644	M-3	12.4	7.6, 7.5, 7.4, 7.4	1800 1800 1750 1750	4.00	0.27	*	350	0.020	*	*	*	*	*	*	*	*	*	*	19.0	*	8,7,7,8	11,16,14,14
28-Sep-90	32663	M-3	11.8	7.1, 7.1, 7.1, 7.1	1118 1118 1119 1118	5.00	0.23	*	380	*	*	*	*	*	*	*	*	*	*	*	23.0	*	7,14,16, 17	20,20,20,20
4-Apr-91	34576	M-3	16.2	7.2, 7.2, 7.2, 7.2	1066 1065 1061 1069	0.70	0.31	*	309	*	*	*	*	*	*	*	*	*	*	24.0	*	4,3.8, 3.7,3.7	20,20,20,20
1-Oct-91	37014	M-3	12.3	7.1, 7.1, 7.1, 7.1	1083 1079 1080 1081	1.90	0.24	*	344	*	*	*	*	*	*	*	*	*	*	25.2	*	5.5,4.8, 4.9,4.4	ND,ND,ND, ND
31-Mar-92	39016	M-3	11.5	7.1, 7.1, 7.1, 7.1	966 968 961 968	0.90	0.35	*	330	*	*	*	*	*	*	*	*	*	*	27.0	*	3.2,3.13, 3.21, 3.18	ND,ND,ND, ND
12-Apr-93	930408304	M-3	11.9	7.3	950	2.30	0.69	*	320	*	*	*	*	*	*	*	*	*	*	24.0	*	3.0	<20
10-Nov-93		M-3	12.1	7.2 7.2 7.2 7.3	1400 1400 1400 1400	.79	.41	*	320	*	*	*	*	*	*	*	*	*	*	42.0	*	4.4	20
11-Mar-94	7719-3	M-3	11.6	7.40 7.28 7.37 7.38	1130 1130 1100 1150	*	*	.16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7-Nov-85	20030	M-4	13.0	6.7	3600	2.75	3.90	0.464	2000	<0.002	0.20	<0.005	<0.05	<0.10	<0.0002	<0.002	0.02	430	4.1	140.0	<0.05	6,6,6,6	33,41,35,37
25-Feb-86	20523	M-4	12.0	6.9	5450	7.50	4.80	0.659	1830	0.003	0.62	0.005	<0.05	<0.10	<0.0002	0.005	<0.01	348	*	115.0	<0.05	6	26
10-Apr-86	20737	M-4	11.5	6.8	4800	8.30	4.20	0.730	1630	*	*	<0.005	0.03	<0.03	*	*	*	320	*	92.0	0.06	5	<100
29-Dec-86	21795	M-4	11.9	6.8	5350	4.70	3.60	0.780	2400	0.020	*	0.012	<0.05	0.01	*	<0.002	0.02	200	5.0	88.0	<5	5	21
27-Mar-87	22074	M-4	11.1	6.9	4450	5.40	3.80	0.660	2100	<0.002	*	0.010	<0.05	<0.01	*	<0.002	<0.01	180	8.3	82.1	<5	5	39
30-Jun-87	22450	M-4	*	6.8	6100	9.00	4.10	0.840	2200	<0.002	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	290	19.0	84.0	3.0	6	39
28-Sep-87	22903	M-4	12.7	6.8	7100	10.70	4.10	0.460	2700	<0.002	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	290	19.0	84.0	3.0	6	39
[illegible]Mar-88	22686	M-4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	6,6,6,6	24,23,21,18
29-Sep-88	24818	M-4	*	7.3	3000	0.80	1.69	*	1000	*	*	*	*	*	*	*	*	*	*	43.0	<5	14.5	15

Table 6 (Continued)

Date Sampled	Lab Desig.	Field Station	Water Temp (C) (fld)	pH (fld)	Spec. Cond. (um/cm) (fld)	Total Iron (mg/l)	Total Mang (mg/l)	Total Zinc (mg/l)	Sulfates (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Cadmium (mg/l)	Total Chromium (mg/l)	Total Lead (mg/l)	Total Mercury (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sodium (mg/l)	Nitrate-Nitrogen (mg/l)	Chloride (mg/l)	Phenol (ug/l)	Total Organic Carbon (mg/l)	Total Organic Halogen (ug/l as Cl)
EPA Interim Primary Drinking Water Standards										0.05	1.0	0.01	0.05	0.05	0.002	0.01	0.05						
4-Apr-89	26355	M-4	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8	27
25-Sep-89	27620	M-4	13.3	6.7	6450	9.00	0.92	0.760	2200	0.010	<0.10	<0.010	<0.05	<0.01	<0.0005	<0.005	0.01	263	*	42.0	<0.01	15,14, 14,13	22,19,18,15
27-Mar-90	30645	M-4	12.0	7.0, 6.9, 6.8, 6.8	6050 6100 6100 6100	6.00	3.60	*	2030	*	*	*	*	*	*	*	*	*	*	27.0	*	33,31, 31,32	42,29,25,15
28-Sep-90	32664	M-4	13.1	6.6, 6.6, 6.6, 6.6	3930 3930 3940 3940	5.00	3.10	*	3600	*	*	*	*	*	*	*	*	*	*	41.0	*	27,17, 35,17	ND,ND,ND, ND
4-Apr-91	34577	M-4	15.4	6.8, 6.8, 6.8, 6.8	3680 3510 3350 3460	2.30	3.60	*	1459	*	*	*	*	*	*	*	*	*	*	44.0	*	5.5,5.8, 4.9,4.6	20,20,20,30
1-Oct-91	37015	M-4	13.3	6.7, 6.7, 6.7, 6.7	3750 3760 3760 3760	0.80	2.80	*	1628	*	*	*	*	*	*	*	*	*	*	53.0	*	6.6,6.1, 5.4,6.8	10,10,20,10
31-Mar-92	39017	M-4	11.4	6.8, 6.9, 6.9, 6.9	3390 3020 3140 3320	1.80	3.00	*	1700	*	*	*	*	*	*	*	*	*	*	46.0	*	4.68, 4.76,4.7, 4.84	ND,ND,ND, ND
12-Apr-93	930408302	M-4	11.2	7.2	2650	0.90	2.7	*	1100	*	*	*	*	*	*	*	*	*	*	420.0	*	4.0	20
10-Nov-93		M-4	13.2	6.8 6.8 6.8 6.8	4200 4300 4300 4300	.20	2.5	*	1300	*	*	*	*	*	*	*	*	*	*	55	*	5.9	20
7-Nov-85	20031	M-5	13.5	7.4	1250	0.27	0.04	0.712	80	0.026	0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	0.02	203	2.8	37.0	<0.05	4,4,4,4	15,17,17,20
25-Feb-86	20524	M-5	11.8	7.5	1000	0.60	0.10	0.970	30	0.018	0.18	0.005	<0.05	<0.10	<0.0002	<0.002	<0.01	176	*	33.0	<0.05	4	<20
10-Apr-86	20738	M-5	11.0	7.4	900	0.08	0.10	0.040	150	*	*	<0.005	<0.01	<0.03	*	*	*	172	*	32.0	0.13	3	<100
29-Dec-86	21796	M-5	12.7	7.4	1050	<0.10	0.21	0.050	120	0.020	*	<0.005	<0.05	<0.01	*	<0.002	<0.01	122	4.4	24.0	<5	3	20
27-Mar-87	22075	M-5	11.2	7.5	1000	<0.03	0.02	<0.010	100	0.020	*	<0.005	<0.05	<0.01	*	<0.002	0.02	113	4.7	22.8	<5	3	24
30-Jun-87	22451	M-5	*	7.6	1250	2.00	0.06	83.000	60	0.017	*	<0.010	<0.05	<0.01	*	0.004	0.02	134	7.4	22.7	<5	69	21
28-Sep-87	22904	M-5	12.9	7.4	1050	0.45	0.02	<0.010	136	0.017	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	150	7.9	26.2	9.5	3	28
7-Nov-85	20032	M-6	13.0	7.5	1530	0.50	0.34	0.050	275	0.019	0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	<0.01	275	8.4	27.0	<0.05	4,5,4,4	38,20,20,23
25-Feb-86	20525	M-6	12.3	7.5	1200	1.00	0.14	0.067	268	0.028	0.16	<0.005	<0.05	<0.10	<0.0002	0.006	<0.01	214	*	27.0	<0.05	5	<20
10-Apr-86	20739	M-6	11.7	7.5	1300	0.70	0.13	0.050	332	*	*	<0.005	<0.01	0.03	*	*	*	220	*	27.0	*	*	*

Table 6 (Continued)

Date Sampled	Lab Desig.	Field Station	Water Temp (C) (fld)	pH (fld)	Spec. Cond. (um/cm) (fld)	Total Iron (mg/l)	Total Mang (mg/l)	Total Zinc (mg/l)	Sulfates (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Cadmium (mg/l)	Total Chromium (mg/l)	Total Lead (mg/l)	Total Mercury (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sodium (mg/l)	Nitrate-Nitrogen (mg/l)	Chloride (mg/l)	Phenol (ug/l)	Total Organic Carbon (mg/l)	Total Organic Halogen (ug/l as Cl)
EPA Interim Primary Drinking Water Standards										0.05	1.0	0.01	0.05	0.05	0.002	0.01	0.05						
29-Dec-86	21797	M-6	12.4	7.4	1400	0.10	0.15	0.040	280	0.022	*	0.005	<0.05	<0.01	*	<0.002	0.01	90	7.8	28.0	<5	4	20
27-Mar-87	22076	M-6	11.6	7.4	1250	0.38	0.14	0.030	260	0.022	*	<0.005	<0.05	<0.01	*	<0.002	0.03	155	6.0	27.9	<5	4	27
30-Jun-87	22452	M-6	*	7.6	1700	0.31	0.12	0.030	60	0.018	*	<0.010	<0.05	<0.01	*	0.003	<0.01	90	8.0	27.1	5	70	34
28-Sep-87	22905	M-6	11.9	7.5	1400	0.43	0.16	<0.010	260	0.017	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	200	12.5	28.0	8.0	4	19
30-Mar-88	23687	M-6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	5,5,5,5	19,18,18,15
29-Sep-88	24819	M-6	*	7.6	1420	0.40	0.17	*	190	*	*	*	*	*	*	*	*	141	*	29.0	0.02	10.9	30
4-Apr-89	26356	M-6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	6	18
25-Sep-89	27621	M-6	12.0	7.6	1500	1.00	0.25	0.050	230	0.020	<0.10	<0.010	<0.05	0.01	<0.0005	<0.005	0.04	210	*	28.0	<0.01	13,12, 11,10	22,16,15,15
27-Mar-90	30646	M-6	12.3	7.3, 7.3, 7.3, 7.3	1450 1450 1450 1500	0.30	0.28	*	280	*	*	*	*	*	*	*	*	*	*	18.0	*	ND,ND, ND,2	18,18,32,20
28-Sep-90	32665	M-6	12.0	7.1, 7.1, 7.1, 7.1	1035 1033 1033 1033	0.50	0.19	*	270	*	*	*	*	*	*	*	*	*	*	30.0	*	13,8, 14,9	20,20,20,30
4-Apr-91	34578	M-6	16.3	7.2, 7.2, 7.2, 7.3	1029 1003 995 1002	0.50	0.24	*	232	*	*	*	*	*	*	*	*	*	*	26.0	*	4,3.8, 3.8,3.9	10,10,10,20
1-Oct-91	37016	M-6	12.3	7.1, 7.1, 7.1, 7.1	1043 1046 1044 1042	1.50	0.20	*	305	*	*	*	*	*	*	*	*	*	*	29.4	*	3.8,3.3, 2.7,2.3	10,20,20,20
31-Mar-92	39018	M-6	11.2	7.2, 7.2, 7.2, 7.2	1007 1007 1007 1008	0.60	0.23	*	310	*	*	*	*	*	*	*	*	*	*	28.0	*	12.5, 12.7, 12.5, 12.6	ND,ND,ND, ND
12-Apr-93	930408303	M-6	11.4	7.3	910	2.70	0.39	*	330	*	*	*	*	*	*	*	*	*	*	27.0	*	3.0	<20
10-Nov-93		M-6	12.6	7.2 7.3 7.3 7.3	1350 1400 1400 1400	.53	.23	*	270	*	*	*	*	*	*	*	*	*	*	57.0	*	4.4	20
7-Nov-85	20033	M-7	13.0	7.5	1460	0.22	<0.01	0.020	120	0.023	0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	<0.01	258	5.4	29.0	<0.05	4,4,4,5	32,25,22,21
25-Feb-86	20526	M-7	12.4	7.4	1150	0.52	0.06	0.400	100	0.018	0.18	<0.005	<0.05	<0.10	<0.0002	0.004	0.03	166	*	26.0	<0.05	5	<20
10-Apr-86	20740	M-7	12.2	7.4	1300	0.14	0.01	0.040	306	*	*	<0.005	<0.01	<0.03	*	*	*	217	*	30.0	*	*	*
[redacted]ec-86	21798	M-7	12.1	7.5	1200	<0.10	0.08	0.060	180	0.024	*	<0.005	<0.05	0.01	*	<0.002	0.01	97	2.8	23.0	<5	8	21
27-Mar-87	22077	M-7	12.1	7.5	1300	0.05	<0.01	<0.010	240	0.029	*	<0.005	<0.05	<0.01	*	<0.002	<0.01	162	7.2	31.6	<5	4	23

Table 6 (Continued)

Date Sampled	Lab Desig.	Field Station	Water Temp (C) (fld)	pH (fld)	Spec. Cond. (um/cm) (fld)	Total Iron (mg/l)	Total Mang (mg/l)	Total Zinc (mg/l)	Sulfates (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Cadmium (mg/l)	Total Chromium (mg/l)	Total Lead (mg/l)	Total Mercury (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sodium (mg/l)	Nitrate-Nitrogen (mg/l)	Chloride (mg/l)	Phenol (ug/l)	Total Organic Carbon (mg/l)	Total Organic Halogen (ug/l as Cl)
EPA Interim Primary Drinking Water Standards										0.05	1.0	0.01	0.05	0.05	0.002	0.01	0.05						
30-Jun-87	22453	M-7	*	7.6	1500	0.07	<0.01	0.900	260	0.024	*	<0.010	<0.05	<0.01	*	<0.002	<0.01	100	8.0	31.8	5	75	28
28-Sep-87	22906	M-7	12.2	7.6	1400	0.10	<0.01	<0.010	240	0.022	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	210	14.5	32.2	<2.0	4	27
30-Mar-88	23688	M-7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	4,4,4,4	21,18,17,19
29-Sep-88	24820	M-7	*	7.6	1450	<0.10	<0.01	*	240	*	*	*	*	*	*	*	*	165	*	30.0	0.02	9	21
4-Apr-89	26357	M-7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	6	23
25-Sep-89	27622	M-7	12.4	7.5	1500	0.60	0.04	0.080	180	0.040	<0.10	<0.010	<0.05	0.02	<0.0005	<0.005	0.09	130	*	20.0	<0.01	13,11, 10,9	30,29,24,21
27-Mar-90	30647	M-7	12.9	7.4, 7.3, 7.3, 7.3	1500 1500 1500 1490	0.10	<0.01	*	260	*	*	*	*	*	*	*	<0.01	*	*	21.0	*	22,18, 15,18	20,21,19,21
28-Sep-90	32666	M-7	12.5	7.1, 7.1, 7.1, 7.1	994 993 994 992	ND	ND	*	270	*	*	*	*	*	*	*	*	*	*	25.0	*	8,15,5,6	50,10,ND,20
4-Apr-91	34579	M-7	15.8	7.2, 7.2, 7.2, 7.2	1050 1037 1034 1035	ND	0.01	*	232	*	*	*	*	*	*	*	*	*	*	33.0	*	3.8,4.2, 3.8,4.2	ND,ND,ND, ND
1-Oct-91	37017	M-7	12.5	7.0, 7.0, 7.0, 7.0	1021 1022 1021 1020	ND	ND	*	274	*	*	*	*	*	*	*	*	*	*	33.5	*	2.2,2.3, 3.9,3.2	10,20,20,20
31-Mar-92	39019	M-7	11.7	7.7, 7.2, 7.2, 7.2	1044 1041 1042 1043	ND	ND	*	320	*	*	*	*	*	*	*	*	*	*	37.0	*	3.7,3.63, 3.84, 3.69	ND,ND,ND, ND
12-Apr-93	930408301	M-7	14.2	7.5	1.080	<0.10	<0.01	*	340	*	*	*	*	*	*	*	*	*	*	39.0	*	3.0	30
10-Nov-93		M-7	12.1	7.4 7.4 7.4 7.4	1300 1300 1300 1300	.03	<.01	*	240	*	*	*	*	*	*	*	*	*	*	37.0	*	4.3	20
7-Nov-85	20034	M-8	13.5	7.7	1410	0.73	0.02	0.049	120	0.021	0.10	<0.005	<0.05	<0.10	<0.0002	<0.002	0.05	230	4.1	19.0	<0.05	4,4,4,4	21,22,24,20
25-Feb-86	20527	M-8	12.3	7.5	1100	0.39	0.02	0.217	164	0.020	0.18	<0.005	<0.05	<0.10	<0.0002	0.004	0.01	176	*	24.0	<0.05	4	<20
10-Apr-86	20741	M-8	11.5	7.5	1100	0.16	0.02	0.050	320	*	*	<0.005	<0.01	<0.03	*	*	*	207	*	27.0	<0.05	4	<50
29-Dec-86	21799	M-8	12.6	7.4	1400	<0.10	0.03	0.020	260	0.024	*	0.006	<0.05	<0.01	*	<0.002	0.01	110	7.3	34.0	<5	4	19
27-Mar-87	22078	M-8	11.9	7.5	1150	0.03	0.01	0.030	220	0.026	*	<0.005	<0.05	<0.01	*	<0.002	<0.01	169	10.0	30.2	<5	4	24
[redacted]un-87	22454	M-8	*	7.5	1650	0.12	<0.01	0.100	220	0.021	*	<0.010	<0.05	<0.01	*	0.003	<0.01	80	10.0	30.1	6	76	36
28-Sep-87	22907	M-8	12.0	7.4	1400	0.17	<0.01	<0.010	260	0.020	<0.10	<0.010	<0.05	<0.01	<0.0002	<0.002	<0.01	200	15.5	32.7	<2.0	4	26

Table 7

Point of Compliance Well Analytical Data
March 1988 to March 1994

Monitor Well No.	Date Sampled	Water Temp. (°C)	pH (Fld)	Spec. Cond. (um/cm) (Fld)	Total Organic Carbon (mg/L)	Total Organic Halogen (mg/L)	Phenol (µg/L)	Sulfates (µg/L)	Chloride (µg/L)	Nitrate-Nitrogen (as N) (µg/L)	Total Sodium (µg/L)	Total Iron (µg/L)	Total Manganese (µg/L)	Total Arsenic (µg/L)	Total Barium (µg/L)	Total Cadmium (µg/L)	Total Chromium (µg/L)	Total Lead (µg/L)	Total Mercury mg/L	Total Selenium mg/L	Total Silver mg/L	Total Zinc mg/L	Total Antimony mg/L	Total Beryllium mg/L	Total Cobalt mg/L	Total Copper mg/L	Total Nickel mg/L	Total Thallium mg/L	Total Tin mg/L	Total Vanadium mg/L	Herbicides[1] µg/L	Pesticides[2] µg/L	Volatile Organic Compounds[3] µg/L	Semi-Volatile Organic Compounds[4] µg/L	Cyanide[5] mg/L	Sulfide[6] mg/L
Drinking Water Standards:																																				
	MCL	*	*	*	*	*	*	*	*	10	*	*	*	0.05	2	0.005	0.1	0.015 (action level)	0.002	0.05	*	*	0.006	0.004	*	1.3 (acting level)	0.1	0.002	*	*		*	*	*	0.2	*
	MCLG	*	*	*	*	*	*	*	*	*	*	*	0.2	*	2	0.005	0.1		0.002	0.05	*	*	0.06	0.004*	*	1.3	0.1	0.005	*	*		*	*	*	0.2	*
	SMCL	6.5 - 8.5	*	*	*	*	*	250	250	*	*	0.3	0.05	*	*	*	*	*	*	*	0.1	5	*	*	*	1.0	*	*	*	*	*	*	*	*	*	*
M-3	3/30/88	*	*	*	5	15.8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/29/88	*	7.6	1600	10	< 10	< 0.01	310	32.0	*	144	2.20	0.30	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/89	*	*	*	5	26	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/25/89	12.3	7.1	1800	8.8	16.3	< 0.01	360	29.0	*	205	3.6	0.31	0.05	< 0.10	< 0.010	< 0.05	< 0.01	< 0.0005	< 0.0005	0.01	0.200	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11/27/89																																			
	3/27/90	12.4	7.5	1775	7.5	13.8	*	350	19.0	*	*	4.0	0.27	0.020	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/28/90	11.8	7.1	1118	13.5	20	*	380	23.0	*	*	5.0	0.23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/91	16.2	7.2	1065	3.8	20	*	309	24.0	*	*	0.70	0.31	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10/1/91	12.3	7.1	1081	4.9	ND	*	344	25.2	*	*	1.90	0.24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/31/92	11.5	7.1	966	3.18	ND	*	330	27.0	*	*	0.90	0.35	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/12/93	11.9	7.3	950	3.0	< 20	*	320	24.0	*	*	2.30	0.96	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11/10/93	12.1	7.2	1400	4.4	20	*	320	42.0	*	*	0.79	0.41	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/11/94	11.6	7.4 7.38 7.37 7.38	1130 1120 1100 1150	*	*	*	*	*	*	*	*	*	< 0.005	< 0.1	< 0.005	< 0.01	< 0.015	< 0.002	< 0.005	< 0.01	0.16	< 0.006	< 0.004	< 0.01	< 0.02	< 0.002	< 0.05	< 0.05	BDL	BDL	BDL	BDL	BDL	< 0.1	< 1
M-4	3/30/88	*	*	*	6	21.5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/29/88	*	7.3	3000	14.5	15	< 5	1000	43.0	*	*	0.80	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/89	*	*	*	8	27	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/25/89	13.3	6.7	6450	14	18.5	< 0.01	2200	42.0	*	263	9.0	0.92	0.010	< 0.10	< 0.010	< 0.05	< 0.01	< 0.0005	< 0.005	0.01	0.760	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/27/90	12.0	6.9	6088	31	28	*	2030	27.0	*	*	6.0	3.60	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/28/90	13.1	6.6	3935	24	ND	*	3600	41.0	*	*	5.0	3.10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/91	15.4	6.8	3500	5.2	20	*	1459	44.0	*	*	2.30	3.60	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10/1/91	13.3	6.7	3758	6.2	17.5	*	1628	53.0	*	*	0.80	2.80	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/31/92	11.4	6.9	3218	4.75	ND	*	1700	46.0	*	*	1.80	3.00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/12/93	11.2	7.2	2650	4.0	20	*	1100	420	*	*	0.90	2.7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11/10/93	13.2	6.8	4275	5.9	20	*	1300	55	*	*	0.20	2.5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/11/94	10.4	6.8 6.9 6.9	4060 3800 3840	*	*	*	*	*	*	*	*	*	0.023	< 0.1	< 0.005	< 0.01	< 0.015	< 0.002	< 0.005	< 0.01	0.21	< 0.006	< 0.01	0.013	< 0.01	0.04	< 0.002	< 0.05	< 0.05	BDL	BDL	BDL	BDL	< 0.1	< 1
M-6	3/30/88	*	*	*	5	17.5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/29/88	*	7.6	1420	10.9	30	0.02	190	29.0	*	141	0.40	0.17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/89	*	*	*	6	18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/25/89	12.0	7.6	1500	11.5	17	< 0.01	230	28.0	*	210	1.00	0.25	0.020	< 0.10	< 0.010	< 0.05	< 0.01	< 0.0005	< 0.005	0.04	0.050	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/27/90	12.3	7.3	1463	ND	22	*	280	18.0	*	*	0.30	0.28	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/28/90	12.0	7.1	1033	11	23	*	270	30.0	*	*	0.50	0.19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/91	16.3	7.2	1007	3.9	13	*	232	26.0	*	*	0.50	0.24	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10/1/91	12.3	7.1	1044	3.0	17	*	305	29.4	*	*	1.50	0.20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/31/92	11.2	7.2	1007	12.6	ND	*	310	28.0	*	*	0.60	0.23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/12/93	11.4	7.3	910	3.0	< 20	*	330	27.0	*	*	2.70	0.39	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11/10/93	12.6	7.3	1463	4.4	20	*	270	57.0	*	*	0.53	0.23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/11/94	13.8	7.35 7.34 7.37	1300 1300 1300	*	*	*	*	*	*	*	*	*	< 0.005	< 0.1	< 0.005	< 0.01	< 0.015	< 0.002	< 0.005	< 0.01	0.07	< 0.006	< 0.01	< 0.01	< 0.01	< 0.01	< 0.002	< 0.05	< 0.05	BDL	BDL	BDL	BDL	< 0.1	< 1
M-7	3/30/88	*	*	*	4	19	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/29/88	*	7.6	1450	9	0.021	0.02	240	30.0	*	165	< 0.10	< 0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/89	*	*	*	6	23	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/25/89	12.4	7.5	1500	11	26	< 0.01	180	20.0	*	130	0.60	0.04	0.040	< 0.10	< 0.010	< 0.05	0.02	< 0.0005	< 0.005	0.09	0.080	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/27/90	12.9	7.3	1500	18	20	*	260	21.0	*	*	0.10	< 0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	9/28/90	12.5	7.1	994	8	20	*	270	25.0	*	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/4/91	15.8	7.2	1040	4	ND	*	232	33.0	*	*	ND	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10/1/91	12.5	7.0	1020	3	17	*	274	33.5	*	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/31/92	11.7	7.3	1042	3.7	ND	*	320	37.0	*	*	ND	ND	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	4/12/93	14.2	7.5	1080	3.0	30	*	340	39.0	*	*	< 0.10	< 0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11/10/93	12.1	7.4	1300	4.3	20	*	240	37.0	*	*	0.03	< 0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	3/11/94	14.3	7.4 7.4 7.4	1230 1160 1220	*	*	*	*	*	*	*	*	*	0.023	< 0.1	< 0.005	< 0.01	< 0.015	< 0.002	< 0.005	< 0.01	< 0.01	< 0.006	< 0.01	< 0.013	< 0.01	< 0.01	< 0.002	< 0.05	< 0.05	BDL	BDL	BDL	BDL	< 0.1	< 1

* = Not Measured
BDL = Below Detection Limit
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal (nonenforceable)
SMCL = Secondary Maximum Contaminant Level (nonenforceable)

In response to NDEQ requirements for the Post Closure Permit reapplication, the March 1994 sampling and analysis of the POC wells was completed for the suite of RCRA (40 CFR Part 264) Appendix IX compounds. As shown in Table 7, none of the Appendix IX compounds was detected in concentrations exceeding drinking water MCLs. Moreover, "hazardous constituents" are identified in 40 CFR 264.93 as "constituents identified in Appendix VIII of part 261 of this chapter that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit." In reviewing the referenced Appendix VIII of part 261, none of the compounds detected in the POC wells is found on the chapter 261 Appendix VIII list. Only compounds regulated are secondary maximum contaminant levels (SMCLs) (sulfates, chloride, total iron and total manganese) and low concentrations of Total Organic Carbon and Total Organic Halogens have been detected within the last 3 years. The laboratory analytical report of the March 11, 1994 sampling is provided in Appendix B.

Groundwater elevation measurements were recorded during the March 11 sampling event. The corresponding piezometric map of the area near the waste acid evaporation pond is provided as Figure 4.

Because no hazardous constituents were detected in groundwater samples from the POC wells, and further because no such hazardous constituents have been detected for a period of greater that 3 years, Lockwood proposes that no further sampling be required, and that the waste acid evaporation pond no longer be a RCRA regulated unit. Justification for acceptance of this proposal is further provided by conclusions of the Hydrogeologic Investigation and Remedial Action Plan Spent Acid Evaporation Pond (HWS, 1984), provided herein in Appendix A. Accordingly, the following sampling and analysis plan of this permit application is provided only to comply with permit application requirements, and will be followed in the event that monitoring is required.

LOCKWOOD CORPORATION FACILITY LAYOUT

N

FENCING
RAILROAD TRACKS

GROUNDWATER MONITURING WELL LOCATIONS

BENCH MARK: CHISELED 'X' IN CENTER OF HEADWALL WEST SIDE OF TWIN CONC. BOX CULVERT ELEV. 3879.78 U.S.G.S. DATUM

LEGEND

□ = STORM DRAIN GATES
→ = DIRECTION OF FLOW
= = UNDERGROUND STORM DRAINS
— = SANITARY SEWER
O FD = FLOOR DRAIN
= = OPEN STORM DRAIN DITCHES
◎ = GROUND WATER MONITORING WELLS
O.F. = OUT FLOW

SCOTTSBLUFF

COUNTY ROAD

PLANT PARKING

OFFICE PARKING

OFFICE PARKING

GERING NE HWY 92

SALVAGE BUILDING

SEPTIC TANK

M.W. NO. LV-4
TOP CASING 81.78
GRD. 79.2

R.F. NO. 1
TOP CASING 80.16
GRD. 77.1

R.F. NO. 2
TOP CASING 79.88
GRD. 77.1

R.F. NO. 5
TOP CASING 87.48
GRD. 85.0

ELECTRICAL TRANSFORMERS

M.W. NO. LV-6
TOP CASING 75.85
GRD. BOTTOM PIT 75.3
GRD. TOP PIT 84.9

M.W. NO. LV-7
TOP CASING 86.25
GRD. 84.3

ELECTRICAL TRANSFORMERS

R.F. NO. 3
TOP CASING 81.39
GRD. 78.9

M.W. LV-8
TOP CASING 88.69
GRD. 86.1

M.W. NO. LV-3
TOP CASING 87.79
GRD. 85.7

M.W. NO. LV-1
TOP CASING 88.00
GRD. 85.8

ELECTRICAL TRANSFORMERS

SHIPPING DOCKS

PAINT BOOTH
PAINT BOOTH
PAINT BOOTH
PAINT LINE
OVEN
OVEN
WASH

M.W. NO. LV-2
TOP CASING 87.58
GRD. 85.9

SHED

SOLVENT RECYLING & PAINT MIXING

HAZARDOUS WASTE STORAGE

R.F. NO. 4
TOP CASING 89.00
GRD. 86.1

M.W. NO. LV-5
TOP CASING 86.61
GRD. 84.6

RECEIVING DOCK

CITY ELECTRIC SUBSTATION

ELECTRICAL TRANSFORMERS

BM

UNION PACIFIC RAILROAD

M.W. NO. M-2
TOP CASING 79.59
GRD. 78.4

M.W. NO. M-4
TOP CASING 80.28
GRD. 78.80
[70.35]

M.W. NO. M-1
TOP CASING 80.18
GRD. 78.6

M.W. NO. M-5
TOP CASING 80.63
GRD. 79.2

M.W. NO MI-1
TOP CASING 79.11
GRD. 78.9

[70.98]

M.W. NO. M-3
TOP CASING 81.02
GRD. 79.5

M.W. NO. MI-2
TOP CASING 80.06
GRD. 78.8

M.W. NO. M-7
TOP CASING 80.46
GRD. 79.0

M.W. NO. M-6
TOP CASING 80.73
GRD. 78.9

[70.51]

[71.15]

M.W. NO. M-8
TOP CASING 81.45
GRD. 79.7

70.0
70.5
71.0
71.5

Figure 4. Groundwater Potentiometric Surface as Measured on March 11, 1994 Waste Acid Evaporation Pond

[70.51] = Water surface Elevation (MSL - 3,800')

3.0 SAMPLING AND ANALYSIS PLAN

In accordance with 40 CFR 264.111, Lockwood closed the waste acid evaporation pond "in a manner that:

(a) Minimizes the need for further maintenance; and

(b) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere."

Previous groundwater sampling activities have demonstrated that the closed impoundment meets the above closure performance standard, and this sampling and analysis Plan (SAP) provides direction for conducting groundwater sampling at the POC wells, if required as a condition of the permit, in a manner that documents obtainment of performance standards.

3.1 Sampling Objectives

If required, sampling of the POC wells will be conducted to document that closure performance standards described above are met. Specifically, the sampling plan will be implemented to detect the "escape of hazardous waste, hazardous constituents, or leachate" from the waste acid evaporation pond. An individual well comparison statistical procedure will be used to compare individual well constituent concentrations to ground water protection standards. The individual well comparison test will be done at a Type I error level of no less than 0.01 (99 % confidence level). Lockwood assumes that protection standards will be those identified by NDEQ as the Drinking Water Standard Maximum Contaminant Levels (MCLs). However, these MCLs differ from maximum concentration limits presented in 40 CFR 264.94 for the following constituents:

Constituent	NDEQ MCL (mg/L)	40 CFR 264.94 Max. Conc. Limits (mg/L)
Total Barium	2.0	1.0
Total Cadmium	0.005	0.01
Total Chromium	0.1	0.05
Total Lead	0.015	0.05
Total Selenium	0.05	0.01

The relative significance of the differences may be small because none of these constituents was detected in the March 11, 1994 samples (detection levels equal to at least the lower of these values). The overall objective of the SAP will be to detect, through approved statistical evaluation techniques, groundwater contamination associated with the closed waste acid evaporation pond.

Water level measurements will also be made during each sampling event. Piezometric maps will be produced and the groundwater gradient and direction in the uppermost aquifer will be determined annually. Additional requirements specified in 40 CFR 264.98 Detection Monitoring Program will be satisfied, as discussed below.

3.2 Monitored Parameters

Analysis of samples will be performed for the following parameters:

i. to establish groundwater quality:

- chloride;
- iron;
- manganese;
- sodium;
- sulfate; and

ii. to be used as indicators of groundwater contamination:

- specific conductance;
- total organic carbon; and
- total organic halogen.

3.3 Sampling Location and Frequency

Samples will be taken from the following monitor wells, in the order presented: M-8 (for background water quality definition), M-6, M-3. M-7, and M-4. Single samples from each well will be collected semi-annually for parameters listed in (i) above. A sequence of four samples from each well will be collected semi-annually for parameters listed in (ii) above. Background arithmetic mean and variance will be determined by pooling historical analytical results.

3.4 Sampling Methods

Sampling methods described herein are the same as those used during the March 11, 1994 sampling event. Use of the Waterra groundwater pumping system was verbally approved by EPA (Bill Pedicino, EPA Region VII, telephone conversation, March 10, 1994) prior to the March 1994 sampling.

3.4.1 **Sampling Steps**

The following describes the March 11, 1994 sampling event, and provides a step-by-step direction for subsequent sampling:

1. The date, time, weather conditions, names of sampling personnel, and other pertinent information were entered into the field log book. All sampling activities were recorded in the water-proof log book.

2. The locked steel protective casings were opened for each well to be sampled and water level measurements were taken using a HAZCO electronic water level meter. Total well bore depth was measured at this time for each well using the water level meter extended the total length of the well bore. Total depth and water level were measured from the top of the PVC casing to the nearest 0.01 foot, using gradations on the water level teflon coated steel tape. A description of the well casing was noted, specifically on wells where no mark could be located for water level measurements. No mark was seen on wells M-7 and M-4, so a permanent mark was placed on the north side of each casing to establish a consistent point for future water level measurements. The well casing lids were replaced following the measurements.

3. Casing volume was calculated based on total length of the water column and the inside casing diameter. A minimum of 3 casing volumes was purged prior to sampling.

4. A 10' x 10' sheet of clear plastic was cut in the center and placed over the protective casing of the well to be sampled. The plastic was tucked around the protective steel frame surrounding the well and spread out on the ground to provide a clean surface for sampling activities.

5. A 55 gallon drum was placed adjacent to the well to collect purge water.

6. A Waterra pump (description given in Section 3.4.2) was attached to the steel riser casing of the well, and a length of dedicated 5/8" diameter high density polyethylene (HDPE) tubing with a foot valve connected at the bottom end was lowered into the well, extending the entire bore length. The tubing was then connected to the Waterra hand pump.

7. The pH meter was calibrated with standard pH 7 and 10 buffers. The probe was rinsed after calibration with deionized water.

8. Pumping was initiated with purged fluid discharged into a 5 gallon bucket. Pumping rate was approximated by recording the time required to fill the 5 gallon container. When full, the 5 gallon container was emptied into the 55 gallon drum. Well purging continued in this manner until a minimum of 3 casing volumes had been removed and field measurements of pH, specific conductivity, and temperature stabilized to within $\pm 5\%$ (all but one reading for specific conductivity had stabilized to $\pm 1\%$). The pH probe and the specific conductivity and temperature sampling cup were rinsed with deionized water after each measurement. The time of commencement of purging and any applicable comments on the color and turbidity of purged water were recorded. Samples were collected after the purge water was free of excessive color and turbidity.

9. Sample bottles were labeled with the following information: date, well number, parameter to be analyzed, and the field sample identification number. Labels were taped to the bottles in ensure that they not come off during transport.

10. Three 1 L amber glass jars were filled: one with no preservative for semi-volatile organic compounds (Method 8270); one with no preservative for pesticides (Method 8080) and herbicides (Method 8150); and one with no preservative for backup.

11. Two 500 mL high density polyethylene (HDPE) jars were filled: one with NaOH and Zinc Acetate preservative for cyanide and sulfide; and one with HNO_3 preservative for total metals. Neither sample was filtered.

12. An 8 ft. length of ¼" diameter HDPE tubing was inserted into the dedicated 5/8" diameter HDPE tubing for collection of samples for analysis of volatile organic compounds. Approximately 2 feet of this ¼" tubing protruded from the top end of the 5/8" tube.

13. Two 40 mL glass vials were filled: one with no preservative for volatile organic compounds (Method 8260); and one with no preservative for backup.

14. Immediately after sampling, water level measurements were taken to check well recovery time. The dedicated HDPE tubing remained in the well, the ¼" VOC sampling tube was removed, and the PVC riser and steel casing were capped and the well was locked.

15. All samples were packaged and preserved on ice in coolers at 4°C. The Chain-of-Custody form was completed for each well, as sampled.

16. All sampling equipment not dedicated to the well was rinsed with deionized water, the plastic sheet was picked up, and all equipment was moved to the next well for sampling; Steps 3 through 16 were repeated at each well.

17. All locks were checked and secured, including those on the well casing lids and the waste acid impoundment gates.

3.4.2 **Sample Collection**

Methods of sample identification, containment and preservation are in accordance with 40 CFR Part 136. All sample collection and field analytical procedures are documented in a water proof, bound field notebook. Sampling and preservation procedures as well as analytical methods used for Appendix IX compounds are covered in Table 8. Table 9 provides sampling and preservation procedures and analytical methods for the detection monitoring program.

The Waterra pump and sampling system consists of a foot valve attached to the bottom of a length of high density polyethylene (HDPE) tubing which is installed in the well. This tubing is oscillated up and down in the well, either by a hand pump or a Waterra electric pump. A hand pump was used during the March 1994 sampling event. The upward stroke gets water moving toward the surface and more water enters during the downward stroke. The one-way foot valve prevents the columns of water from draining during the upwards stroke. Once the water column is moving upward, its' own inertia assists in the pumping action and efficiency, and a pulsing flow of water is established. By providing dedicated HDPE tubing for each well, the potential of cross-contamination is eliminated.

Table 8

Sampling and Preservation Procedures and Analytical Methods for Appendix IX Compounds

Parameters	Containers	Preservative	Sample Volume	Max Holding Time	Method	Detection Limit
Volatile Organic Compounds	Glass-Clear	Cool to 4°C	40 ml	14 days	EPA-8260	0.5 - 5 μg/L
Semi-Volatile Organic Compounds	Glass-Amber	Cool to 4°C	1 Liter	28 days	EPA-8270	10 - 50 μg/L
Herbicides/ Pesticides	Glass-Amber	Cool to 4°C	1 Liter	7 days (extraction) 40 days (analysis)	EPA-8150	1 μg/L .05 - 1 μg/L
Sulfide	Plastic - HDPE	NaOH to pH 12 Cool to 4°C	500 ml	days	EPA 376.1	1 mg/L
Cyanide	Plastic-HDPE	Zn $(C_2H_3O_2)_2$ to pH 9 Cool to 4°C	500 ml	48 hours	EPA-335.1	0.1 mg/L
Total Metals:						
Antimony					EPA-7040	0.006 mg/L
Arsenic					EPA-7060	0.005 mg/L
Barium					EPA-7080	0.1 mg/L
Beryllium					EPA-7090	0.004 mg/L
Cadmium					EPA-7130	0.005 mg/L
Chromium					EPA-7190	0.01 mg/L
Cobalt	Plastic - HDPE	Unfiltered HNO_3 to pH 4	500 ml	6 months	EPA-7210	0.01 mg/L
Copper					EPA-7200	0.01 mg/L
Lead					EPA-7420	0.015 mg/L
Mercury					EPA-7470	0.002 mg/L
Nickel					EPA-7520	0.01 mg/L
Selenium					EPA-7741	0.005 mg/L
Silver					EPA-7760	0.01 mg/L
Thallium					EPA-7840	0.002 mg/L
Tin					EPA-7870	0.05 mg/L
Vanadium					EPA-7910	0.05 mg/L
Zinc					EPA-7950	0.01 mg/L

Table 9

Sampling and Preservation Procedures and Analytical Methods for Detection Monitoring Program

Parameter	Container	Preservative	Sample volume	Maximum Holding Time	Method	Detection Limit
pH	Plastic		Field Determination		150.1*	Range 4.0 - 10.0
Specific Conductance	Plastic		Field Determination		120.1*	Range 0.1 - 20,000
T.O.C.	Glass, amber teflon-lined cap	H_2SO_4 pH <2 cool to 4C	1 liter	28 days	415.1*	5.0 mg/L
T.O.X.	Glass, amber teflon-lined cap	cool to 4C	1 liter	7 days	506**	0.01 mg/L
Chloride	Plastic	cool to 4C	1 liter	28 days	407A**	1 mg/L
Sulfate	Plastic	cool to 4C	1 liter	28 days	420.1*	1 mg/L
Iron (Fe)	Plastic	HNO_3 pH <2	1 liter	6 months	236.1*	0.1 mg/L
Sodium (Na)		cool to 4C			273.1*	1 mg/L
Manganese (Mn)					243.1*	0.01 mg/L

* "Methods for Chemical Analysis of water and Wastes," EPA 600/4-79-20.

** Standard Methods for the Examination of water and Wastewater, 16th Ed., APHA-AWWA-WPCF.

Samples are collected by continuing pumping and allowing the water to flow out of the tube through the suction lift operation of the Waterra system. Upon collection, sealing, and labeling of the first sample, the next sample was collected by continuing pumping action.

The pulsing flow of water established by the Waterra pump is not suitable for collecting samples for volatile organic analysis because of potential sample aeration. This problem is overcome by inserting approximately 8 feet of ¼" HPDE tubing into the dedicated ⅝" tube, making sure to extend the small diameter sampling tube at least 3 to 4 feet below the highest point of the riser tube and leaving about 2 feet of sampling tube protruding from the end of the riser tube. Once the smaller tube has been inserted into the riser tube, the pumping action is resumed. Upon establishment of a steady flow from both tubes, pumping is discontinued and the flow in the riser will stop but the smaller sampling tube will continue to flow, operating as a siphon, drawing down from the column of water standing in the riser. This siphon action is not generated by suction but is the result of gravity flow, and the sample is drawn from below the water surface ensuring that no loss of volatiles occurs.

3.4.3 **Sample Handling and Analysis**

All samples were preserved on ice in two large coolers for transport. The samples were hand delivered to Technology Laboratory, Inc. in Fort Collins, Colorado by the sampler. Chain-of-custody forms were completed and signed by the sampler and the laboratory representative. Samples were analyzed under accepted scientific procedures and EPA methodology, as indicated in Table 8 and by the Technology Laboratory, Inc. report (Appendix B). The chain-of-custody form is included with the laboratory report.

3.4.4 **Chain-Of-Custody Documentation**

Whenever samples are taken from the site, the sample collector follows strict chain-of-custody protocols and initiates a chain-of-custody document which will accompany the sample until its final disposal. Chain-of-custody procedures are described in detail below.

1. A chain-of-custody record will be initiated by the collector of the samples. The collector will record the date and time of collection, the location, the type and number of each sample, and the number of containers. He will assign a unique number to each sample, and affix to the sample an indelibly marked label identifying the sample.

2. Each time the samples are transferred from the custody of one person to another, both persons will sign the custody record and the date and time of transfer will be recorded. By his signature the sample custodian attests that he has inspected the sample containers and documents, has identified each sample by its unique number, and has assured himself of each sample's integrity at the time custody was transferred to him.

3. If the samples must be shipped to the laboratory, then the sample containers will be sealed with evidence tape. The shipping container will also be sealed or locked and the chain-of-custody record will accompany the shipment.

4. Upon receiving samples in the laboratory, the sample custodian will accept custody of the samples, inspecting them as specified in 2, assign laboratory numbers, log the samples, and store them in a locked sample refrigerator.

5. The sample custodian will transfer the samples to the laboratory personnel responsible for the analysis. Each analyst receiving a sample will inspect the sample for integrity and sign the custody record. He must be able to testify in court, if necessary, that from the moment of receipt until the final analysis the sample was in his view and possession, secured in locked storage, or sealed with evidence tape.

6. The custody of unused portions of the sample will be transferred back to the sample custodian, who will maintain them in secure, locked storage until instructed by the laboratory manager to discard them or return them to the client.

7. If at any transfer of custody a breach of the integrity of a sample is discovered, the laboratory supervisor will be notified immediately. He will then take appropriate action.

8. Chain-of-custody records for each project will be retained by the laboratory supervisor, filed by date or project name in a secure storage area.

3.4.5 **Sample Transport**

Samples collected by personnel are field preserved and returned to the laboratory for analysis as soon as possible via hand delivery. Laboratory personnel are notified in advance if the sample requires special treatment or immediate analysis. Sampling personnel ensure that the

samples are properly labeled, preserved, and protected from breakage or tampering enroute. All samples are accompanied by a chain-of-custody document.

3.4.6 **Equipment List**

Equipment used by SE during the March 11, 1994 sampling include:

1. Chevrolet Suburban vehicle containing all sampling equipment, bottles, decontamination equipment, and miscellaneous supplies;

2. Four-liter jar of deionized water;

3. Rubber gloves;

4. Five-gallon plastic bucket;

5. Electronic water level meter with 100 foot cable;

6. Hydac 910 conductivity-temperature-pH field test kit with pH standard fluids (pH 4, 7, & 10);

7. Waterra-300 Lever Pump;

8. 200 feet HDPE Standard ⅝ x ½ tubing;

9. 4 foot valves (back-flow control valves);

10. Waterra tubing cutter;

11. Volatile sample pack (4-8 feet x ¼-inch diameter sampling tubes);

12. 1-L amber glass jars with Teflon-ringed lids (3/well);

13. 500-mL plastic jars with Teflon-ringed lids (2/well);

14. 40-mL glass VOC vials (2/well);

15. Labels;

16. 2 large, ice-filled coolers;

17. 10' x 100' x 2-Mil plastic sheeting;

18. First-Aid Kit; and

19. Tool box.

3.5 Record Keeping

Lockwood will maintain a record of ground water analytical data as measured and in a form necessary for the determination of statistical significance. Monitoring data will be maintained readily available on-site and summarized in a tabular format for easy reference. Transmittal of results to the State and the Regional Administrator will be done in accordance with 40 CFR 265.94.

3.6 Sample Receiving and Disposal

Upon arrival, all samples are inspected by the receiving agent for evidence of breakage, tampering, contamination or leakage. Sample labels are double-checked against sample analysis request sheets and chain-of-custody documents. Sample preservation is checked for conformance to 40 CFR Part 136 specifications, or to the special requirements of the analytical method. If necessary, samples are split and preserved. Only after all discrepancies have been resolved and documented is the sample logged into the Sample Logbook and given a sequentially assigned laboratory number.

If the sample is not analyzed immediately it is placed in sample storage appropriate to the sample matrix and analyses of interest. Ample locked, secure storage at 4 degrees centigrade is available for chain-of-custody samples. Maximum holding times are in accordance with EPA regulations or as specified in the analytical method. If the holding time of an analyte is exceeded before the analysis is completed, the client is notified by the Laboratory Manager and a note included on the final report. The essential steps of the sample receiving process are documented by the receiving agent. Samples are typically held in storage for thirty days after issuance of the report to allow the client to request additional analyses.

3.7 Laboratory Quality Control

The precision and accuracy of all measurements are routinely monitored by the inclusion of quality control samples which are analyzed and statistically evaluated.

1. At least one in ten samples analyzed for any parameter collected as part of the Detection Monitoring Program will be a duplicate sample. The precision of the measuring process is evaluated by comparing the relative standard deviation of duplicate measurements. Control limits are established at 10% RSD; results showing deviations greater than 10% RSD are considered out of control and require that all samples analyzed for that parameter since the last acceptable QC result be reanalyzed.

2. At least one in ten samples analyzed for any parameter is a quality control sample evaluated for accuracy. This may be any one or more of the following:

   i. A matrix-spiked sample. A background split from the sample is analyzed simultaneously with another split which has been spiked with a known quantity of the analyte of interest. The percent recovery of the added spike is calculated by comparison of the background with the spiked sample. Control limits are set at 90%-110% recovery. Spike recoveries outside of these limits require repeating the analysis until recovery is in control, or use of the method of standard additions to account for matrix affects.

   ii. A spiked blank. An aliquot of reagent grade water is spiked with a known quantity of the analyte of interest and analyzed. The percent recovery of the analyte must be within the control limits of 90%-110% or the analysis repeated.

   iii. A known, independently verified check sample. The sample is analyzed and the result compared to the true value. Control limits are set at three standard deviations from the true value. Results outside of these limits require repetition of all analyses performed for that analyte since the last acceptable QC result.

3. When new lots of reagents or solvents are used, or as required by the analytical method, reagent blanks are analyzed to demonstrate freedom from contamination by reagents, glassware or poor analytical technique.

4. These quality control measures are in addition to quality control samples taken as a check on sample collection and transport procedures.

5. These are the laboratory's minimum quality control measures used to routinely monitor the accuracy and precision of analytical procedures; if written methods demand a higher frequency of quality control samples or more stringent measures, the laboratory will follow the requirements of the method.

6. Any failure to meet the established criteria for a quality control measurement is viewed as a warning that the measurement is out of control. Further analysis and reporting of data is stopped, the laboratory manager is notified, and a written quality control irregularity report is initiated. After the problem has been identified and corrected, additional quality control samples are analyzed to ensure that the system is back in control before resuming analysis. All samples analyzed after the last acceptable quality control result are reanalyzed. A file of quality control irregularity reports and corrective actions taken is maintained by the laboratory manager.

3.8 Data Evaluation

Evaluation of the data and owner/operator response will be done in accordance with 40 CFR Part 265.93. This analysis will determine if statistically significant increases (or decreases, in the case of pH) in concentration of water quality parameters have occurred. Statistical analysis of the analytical results of samples from monitoring wells M-3, M-4, M-6 and M-7 for the detection monitoring program will be provided in accordance with 40 CFR 264.97. If available, the EPA model GRITS 4.2 will be used for statistical analyses.

4.0 SITE SECURITY

The waste acid evaporation ponds have been enclosed in an 8-feet-high chain-link fence. The fence on the west and south sides are perimeter fences enclosing the entire Lockwood property. The north and east fences are new interior fences installed during closure operations. A locked access gate is located on the interior fence.

Access to the Lockwood property is limited to authorized personnel only. The perimeter fencing and the main building physically restrict access. The main entrance to the property is manned by a security guard 24 hours per day and locked during off hours. Two secondary entrances exist on the east side of the facility, both of which are kept locked.

Signs with the legend "Closed Hazardous Waste Site - Keep Out" have been posted at each entrance to the closed waste-acid evaporation pond enclosure, in sufficient number to be seen from any approach. Signs are legible from a distance of 25 feet.

5.0 EXPOSURE INFORMATION / RISK ASSESSMENT

Human exposure to hazardous waste or hazardous constituents may occur or be detected through a number of potential exposure pathways. Exposure routes may include air and dust inhalation, water ingestion, or fish which have been exposed to a contaminant from the site. The following categories summarize these potential exposure pathways: groundwater, surface water, air (including subsurface gas), soil contamination, and food-chain contamination.

Primarily, the potential for human exposure at the facility is via the groundwater pathway as a result of leaching of metal contaminants to the underlying aquifer. Potential human exposure via groundwater can occur to persons served by a water supply system that draws contaminated groundwater as their water supply through ingestion and dermal exposure while bathing or showering. It could also occur where agricultural land is irrigated with contaminated groundwater and produce is contaminated and ingested. Humans may also be exposed via consumption of game animals that reside in such contaminated areas. In addition, surface waters may be contaminated by inflows of groundwater through bank seepage and springs. As with groundwater, potential human exposure via surface waters can occur to persons served by a water supply system that draws contaminated groundwater as their water supply through ingestion and dermal exposure while bathing or showering. Other potential human exposure to contaminated surface waters can occur through ingestion of contaminated fish, ingestion of contaminated produce as a result of agricultural and being irrigated with contaminated surface water, dermal and ingestion exposures through swimming and other water contact sports in such waters, and via consumption of game animals that reside in such contaminated areas.

From June to October 1984, a hydrogeologic investigation of the spent acid evaporation pond and surrounding area was performed to determine the extent and severity of groundwater contamination, if any, resulting from use of the pond. The hydrogeologic investigation consisted of a review of existing data, a field investigation under the direction of a hydrogeologist, and laboratory analyses of soil and groundwater samples (Hydrogeologic Investigation and Remedial Action Plan - Appendix A).

The investigation revealed that a leakage occurred in the north cell due to erosion of the clay liner near the influent discharge pipe. Consequently, the opening permitted rapid seepage through the pond bottom and into the underlying soils and groundwater.

The most significant pollutants are chromium and lead. Additional groundwater constituents have shown increases in concentration, including zinc, sulfate and iron. Chemical analysis of saturated sediment samples and groundwater samples provide evidence that the metals have

precipitated out of solution and only a fraction remains mobile. The pollutant plume is being naturally neutralized within a short distance by the alkaline nature of site soils and groundwater, thereby immobilizing the toxic metals. This conclusion is supported by the chemical analyses (Table 4 and Figures 3 and 4, Hydrogeologic Investigation and Remedial Action Plan - Appendix A). In addition, zinc and cadmium, although present at high concentrations in the pond sludges, precipitate out of infiltrating solutions in the alkaline soil and groundwater. Analysis of major aquifer parameters including Specific Conductance and pH and concentration of sulfates vs. distance (Figure 3, 4, and 5, Hydrogeologic Investigation and Remedial Action Plan) indicate that neutralization of the plume and/or maximum radial excursion does not exceed 300 feet to 400 feet from the point of seepage and with cessation of evaporation pond use, the release of pollutants has ended.

The use of groundwater in this area is restricted by the industrial nature of land use. The nearest well (a public supply well) is over 2,000 feet from the plume boundary and withdraws groundwater confined in the Brule aquifer. Samples taken from this well indicated no contamination (Section VI and Appendix III, Hydrogeologic Investigation and Remedial Action Plan - Appendix A). Groundwater flow is controlled by line sources of recharge and discharge which fluctuate with seasonal activities. Groundwater movement through the site is likely to alternate in direction.

In October 1985, eight monitoring wells and two monitoring/interceptor wells were constructed around the evaporation ponds (Figure 2). Groundwater samples from these wells have been tested regularly since installation (Tables 6 and 7). Wells located hydraulically downgradient have been strategically located to monitor the pond for any unexpected contaminant migration, while wells located hydraulically upgradient and further from the pond, determine background quality. Two wells will be used as interceptor or recovery wells in the event monitoring reveals outward migration of contaminated groundwater thus enabling the owner to take corrective action before human exposure occurs.

Historical data, as well as data from the March 11, 1994 Appendix IX sampling indicate that no hazardous constituent is impacting groundwater in the area. Accordingly, Lockwood proposes that the Risk Assessment requirement of this Part B Permit Application be waived.

6.0 EVAPORATION POND CLOSURE INFORMATION

Closure of the evaporation pond was performed in November, 1986. In general, the closure of the facility was completed in the following manner:

1. Pushing the exterior dikes into the center of the cells, thereby covering the contained sludge;

2. Placement of hydrated lime and soil layer;

3. Installation of impermeable synthetic liner;

4. Placing and compacting clay soil cover and gravel stabilizing layer; and

5. Installation of security fence with proper signing.

For details on the closure of the facility, refer to the approved Closure Plan (Appendix C).

In addition, a Post Closure Plan (Appendix D) for the facility was submitted to the NDEC in September, 1985. The Post Closure Plan identified the groundwater monitoring plan and maintenance activities to be carried out during the post closure care period. Annual and routine periodic inspections and associated maintenance of the facility final cover, security fencing/procedures used to limit public access to the facility, and a groundwater monitoring system will be conducted to ensure that each item remains functionally reliable throughout the post closure care period (Section I and Section II, Post Closure Plan). The potential for human exposure and subsequent future exposure via the groundwater pathway will be minimized at the facility as a result of proper engineering/design/operating controls and procedures implemented through and further described in detail in the Closure and Post Closure Plans.

Other potential exposure pathways (described previously) could conceivably contribute to potential human exposure in addition to groundwater. The potential for human exposure via these pathways, however, are extremely remote and will have also been minimized at the facility through proper engineering/design/operating controls and procedures described above.

7.0 POST CLOSURE INSPECTION

7.1 Post-Closure Inspection Schedule

Waste acid evaporation ponds in the southwest corner of the Lockwood property were closed in accordance with 40 CFR 265. Regular inspection and maintenance of the site must be accomplished under the Post Closure Plan. Personnel responsible for conducting the inspection must be trained as discussed in Section 10.0 of this document. Training is necessary to make personnel aware of the potential hazards and liabilities which may be faced by Lockwood and themselves if the structural integrity of the clay cover, fencing and monitoring wells were allowed to deteriorate. Items on the following page shall be checked monthly and maintenance activities undertaken as necessary.

7.2 Certification of Post-Closure Care

Not later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, Lockwood will submit to the Regional Administrator, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification will be signed by Lockwood and will be furnished to the Regional Administrator upon request until he releases Lockwood from the financial assurance requirements for post-closure care under 40 CFR 264.145 (i).

POST CLOSURE INSPECTION SCHEDULE
LOCKWOOD CORPORATION

Date of Inspection_____

Inspector's Name_____

1. Walk perimeter of fence checking for loose posts, missing signs, holes in chain-link fabric, or other obvious damage.

   Satisfactory Condition

   Unsatisfactory Condition

   Maintenance or corrective action undertaken and date completed:

   _____

   _____

   _____

   _____

   Date_____Responsible Party_____

2. Check security locks on access gates to site to assure they are functional.

   Satisfactory Condition

   Unsatisfactory Condition

   Maintenance or corrective action undertaken and date completed:

   _____

   _____

   _____

   _____

   Date_____Responsible Party_____

3. Walk around and over entire site checking gravel surface and clay soil cover for wind or water erosion damage.

Satisfactory Condition

Unsatisfactory Condition

Maintenance or corrective action undertaken and date completed:

_____

_____

_____

_____

Date_____Responsible Party_____

4. Check for evidence of ponding water on gravel surface and improper drainage away from site.

Satisfactory Condition

Unsatisfactory Condition

Maintenance or corrective action undertaken and date completed:

_____

_____

_____

_____

Date_____Responsible Party_____

5. Check site for excessive weed growth and damage to clay cover by rodents.

Satisfactory Condition

Unsatisfactory Condition

Maintenance or corrective action undertaken and date completed:

_____

_____

_____

_____

Date_____Responsible Party_____

6. Check all monitoring wells for damage to above ground extensions, caps and security locks on caps.

Satisfactory Condition

Unsatisfactory Condition

Maintenance or corrective action undertaken and date completed:

_____

_____

_____

_____

Date_____Responsible Party_____

8.0. FACILITY LOCATION INFORMATION

Information concerning the occurrence of floodplans and seismic activities at or near the location of the facilities is presented below.

1. 100 - Year Floodplan

   The Federal Insurance Administration has issued a Flood Hazard Boundary Map for the area where the Lockwood Facility is located. The map, a copy of which is included in Appendix E, indicates that the facilities in question fall outside any Flood Hazard areas.

2. Seismic Standard

   The Hydrogeologic Investigation of 1984 included analysis of air photos of the site including the area within a radius of approximately one mile. No lineations suggesting the presence of faulting were observed. Field observations within a radius of about 1000 feet confirmed this conclusion. A literature search (HWS, 1989) produced no documentation of faults in the area. Generally the region contains only a few faults.

   Therefore, because of the scarcity of faulting in general in the region and the absence of known Holocene faulting, it is concluded that the site complies with the Seismic standard.

9.0 PERSONNEL TRAINING

In order to assure that the closed site is adequately maintained during the post-closure period, this Training Guide has been prepared for use in training personnel responsible for site maintenance.

LOCKWOOD TRAINING GUIDE
FOR POST-CLOSURE INSPECTION AND CARE OF
CLOSED HAZARDOUS WASTE SITE

Location: The closed hazardous waste site (old spent acid evaporation pond) is located on the far South West corner of the South Lot of the existing facility along Highway 92 East in the Gering Industrial Park.

Security: The entire manufacturing complex is enclosed by an eight foot high chain link fence and the closed waste site is further contained on the inside perimeter by a like fence with locked gates. The facility is guarded by the company's 24 hour security team which has a security guard house located at the North East shop employee entrance gates.

Hazard: No chemical hazard currently exists at the closed waste site. The entire site was neutralized with soda ash and covered with dirt, a membrane liner, more dirt and a gravel cover per the Waste Site Closure Plan.

Responsible: Responsibility for inspection and care of the closed waste site is shared by the Plant Manager and the plant Maintenance Department.

Inspection of the closed waste site is performed on a monthly basis. Adherence to the following check sheet verifies acceptable completion of inspection and any required maintenance:

1) Examine and test locks on both the West and North gates to verify they are secure and functional.

2) Check gravel and clay surface covers for wind or water erosion or other damage. If damage exists contact maintenance for evaluation and repair. If necessary, a local contractor can be contracted to repair or replace the surface cover. Only light weight equipment or full tread equipment should be used to limit potential further damage to the cover.

3) Evidence of ponding or improper drainage detrimental to the gravel or soil cover should be reported and corrected.

4) Excessive weed growth must be cut or removed to prevent heavy weed or plant root damage to the cover or security fence. Weeds can be cut with any light weight equipment, trimmers or pulled by hand. No heavy tired equipment, which would leave deep damaging tracks or get stuck in the cover can be used. The use of any herbicides for weed control would require Nebraska Department of Environmental Quality (NDEQ) pre-approved.

5) Check all monitoring and removal wells for damage to riser pipes, casing, caps in position, and functional locks. Report any problems for immediate corrective action by Maintenance.

6) Walk and examine perimeter fence for any sign of damage which requires repair. Maintenance is to be contacted for any problems.

Copies of this training document are to be included in the Plant II safety and training book along with the full hazardous materials procedures. As with all certified and regulatory compliance training, the Personnel department will maintain records of this training and procedures are still in effect. This Training Guide will be re-evaluated and updated, as conditions indicate, to keep the instructions current to regulatory requirements.

Distribution:

John Bushore	Personnel Manager
Regina Metzger	Plant Manager

File: Post-Closure Plan

10.0 FINANCIAL CONSIDERATIONS

In accordance with the requirements of 40 CFR 264.144 and 264.145 the following information regarding Post-Closure Cost Estimates and Financial Assurance is presented.

1. Post-Closure Sampling, Testing and Site Maintenance Costs

   The estimated costs of collecting and analyzing groundwater samples from the existing monitoring wells and costs of inspecting and maintaining the closed site have been estimated and are as shown in Appendix F.

2. Financial Assurances

   A Trust Agreement has been set up to assure that funds will be available for sampling, testing, and maintaining the closed site. A copy is included in Appendix G.

SECTION II - PART A PERMIT APPLICATION

The completed Part A Permit Application Form is provided in Appendix H.

SECTION III - SOLID WASTE MANAGEMENT UNITS

This section reviews Solid Waste Managements Units (SWMUs) identified in the Lockwood Final RCRA Facility Assessment (RFA) Report (Versar, Inc.)

A. Hazardous Waste Storage Area

The site is located south of the galvanizing plant in a fenced area. It contains drums of paint wastes, paint sludges, solvent sludges, and waste acid effluent tank sludges. The drums are stored on pallets and are periodically transferred to a hazardous waste disposal site out of state.

B. Waste Oil Storage Area

This storage area is located in the southeast corner of the property in a fenced area. Primarily waste oils have been stored in this area in 55-gallon drums. In the past, some paint and solvent sludges were stored here, but now are stored in the hazardous waste storage area.

C. Scrap Metal Waste Bin Area

The waste bins are located east of the machine shop near the guard house at the west edge of the employee parking lot. The bins are used for disposal of scrap steel from fabrication processes and scrap metal chips from the machine shop. The bins are periodically emptied and disposed of off-site.

D. Raw Product Storage Area

This storage area is located west of the loading docks and south of the warehouse docks. Products stored here include paints, oils, lubricants, and chemicals. All are stored in drums, cans or tanks, with some sitting on the ground and some on concrete pads.

The Final RCRA Facility Assessment Report discussed the evidence of spills or releases at some of the above SWMU's. Some sampling and testing of soils and water was done as part of the RFA. More sampling and testing was completed by HWS technologies, Inc. in April, 1992 to confirm the presence or absence of contaminations at these sites. The corresponding summary report is herein provided in Appendix I.

Soil sampling was performed at the above listed SWMUs, and the analytical results indicated that no hazardous waste constituents were detected at levels exceeding US EPA action levels for Corrective Actions under RCRA; or where no RCRA standard has been proposed, commonly used standards at CERCLA sites in Region VII. Accordingly, follow-up Phase II soil sampling activities were not proposed.

changes in the parameters reduce monitoring to biannual for two additional years. Location and design of the wells will be submitted at completion of the investigation.

4. If spent acid liquors are to be disposed of at this facility repair of the clay liner or construction of lined evaporation pond will be appropriate for protection of the groundwater.

We respectfully request your permission to extend the date of completion of the hydrogeologic investigation to September 24, 1984.

Sincerely,

HOSKINS-WESTERN-SONDEREGGER, INC.

By_____
Roy W. Elliott
Certified Professional Geologist #6684

RWE/vm
84/3936
Enclosure
1 cc: Roy Dugan, General Foreman
Lockwood Corp.
1 cc: Gary Brandt

APPENDIX A

Hydrogeologic Investigation and Remedial Action Plan

December 17, 1984

Lockwood Corporation
P.O. Box 160
Gering, Nebraska 69341

ATTENTION: Mr Roy Dugan

REFERENCE: Supplemental Report - Hydrogeologic Investigation and Remedial Action Plan Spent Acid Evaporation Pond

Dear Sir:

Soil samples from the evaporation pond sediments, the clay liner and the underlying alluvial soils have been analyzed for EP Toxicity, metals. Attached is exhibit I a summary of the analytic results. Figure 1 is a plot of the sampling locations including pond sites and auger boring locations.

Hydrogeologic investigation revealed the presence of chromium, lead and mercury in excursion from the pond. Excursion has occurred in a silty gravel aquifer beneath the ponds. Chemical analysis of saturated sediment samples and groundwater samples provides evidence that the metals have precipitated out of solution and only a fraction remains mobile. Methods of analysis include total metals in saturated sediments, EP Toxicity metals in saturated sediments and total metals in groundwater. The conditions of extractions for "totals" and EP Toxicity are rigorous and acidic. The natural hydrogeologic setting is alkaline. Our conclusions are that the naturally alkaline conditions at the site neutralize the acidic fluids within a short distance immobilizing the toxic metals. This conclusion is supported by the chemical analyses (Table 4, Hydrogeologic Investigation and Remedial Action Plan) and the diminishing concentrations of sulfates and the parameter, specific conductance in distance away from the evaporation ponds (Figures 3 and 4). Chromium concentrations decay at 0.1% to 0.3% per foot from the evaporation pond.

Our findings, based on evaluation of the EP Toxicity analysis of pond, liner and soil sediments are as follows:

1. The evaporation pond sediments, the clay liner and underlying soils are non-hazardous.

2. Mobil toxic metals in the groundwater are remnant of a single short term excursion resulting from erosion of the clay liner and subsequent leakage into the underlying aquifer.

3. Natural alkalinity is neutralizing the acid front and immobilizing the toxic metals.

4. With cessation of evaporation pond use the source of pollution has ended.

Based on these findings we reinterate the following recommendations:

1. Instigate closure of the evaporation ponds. Monitor the groundwater as recommended in the Hydrogeologic Investigation and Remedial Action Plan.

2. Encapsulate the abandoned ponds with a silty clay cover with positive, radial drainage.

3. We find no cause for removal of underlying soils and do not recommend treatment or removal.

If you have any questions concerning this letter or our recommendations, please contact myself or Mr. Brandt at your convenience.

Sincerely,

HOSKINS-WESTERN-SONDEREGGER, INC.

By_____
Roy W. Elliott
Hydrogeologist

RWE/vm
84/3936
Attachment
1 cc: Gary Brandt

HYDROGEOLOGIC INVESTIGATION AND REMOVAL ACTION PLAN
SPENT ACID EVAPORATION POND
LOCKWOOD CORPORATION
GERING, NEBRASKA

OWNER:

Lockwood Corporation
P.O. Box 160
Gering, Nebraska 69341

PREPARED BY:

Hoskins-Western-Sonderegger, Inc.
825 "J" Street P.O. Box 80358
Lincoln, Nebraska 68508

TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

Hoskins-Western-Sonderegger, Inc. performed a hydrogeologic investigation for the Lockwood Corporation, Gering, Nebraska from June to October, 1984. The investigation was in response to an Administrative Order (No. 756) from the Nebraska Department of Environmental Control (June 20, 1984) and involved a study of the Lockwood spend acid evaporation pond and surrounding area to determine the extent and severity of groundwater contamination, if any, resulting from use of the pond. Specifically, the study was to determine if hazardous concentrations of heavy metals had reached the aquifer and, if so, the nature of their movement and recommendations for remedial action or aquifer rehabilitation.

The Lockwood plant is located in the East 1/2 of the SE1/4, Section 1, T21N, R55W in Scottsbluff County, Nebraska (see figure 1). The spent acid evaporation pond is located at the southwest corner of the plant property.

The hydrogeologic investigation consisted of a review of existing data; a field investigation under the direction of a hydrogeologist; and laboratory analyses of soil and groundwater samples. Included in this report are descriptions of the review of existing data and the field investigation procedures; laboratory analysis conducted; and summaries of evaluation procedures and results under the major headings of Geology, Hydrogeology, and Groundwater Quality. Conclusions and recommendations follow and are offered as a framework for future remedial action.

II. CONCLUSIONS & RECOMMENDATIONS

Based on the data to date and the findings of this investigation, we conclude that the chromium/lead/sulfate pollutant plume is the result of a leakage episode initiated by erosion of an effective clay liner. The pollution plume, in at least the westerly and southerly directions, is being naturally neutralized by the alkaline nature of site soils and groundwater. We find the extent of pollution to not exceed 300 to 400 feet from the site and with cessation of evaporation pond use that the pollution has ended.

The use of groundwater in this area is restricted by the industrial nature of land use. The nearest public supply well is over 2,000 ft. from the plume boundary and withdraws groundwater confined in the Brule aquifer. Groundwater flow is controlled by line sources of recharge and discharge which fluctuate with seasonal activities. Groundwater movement through the site is likely to alternate in direction.

Our recommendations are as follow:

1. Instigate closure of the spend acid evaporation pond.

2. Remove the pond sediments and clay liner and dispose of in accordance with

NDEC regulations.

3. Cover the site with a silty clay cap not less than 1.0 ft. thick and grade to drain away from the site.

4. Install four (4) groundwater monitoring wells fully penetrating to the top of the Brule formation. Sample these wells on a quarterly bases for a minimum of 1 year and test the samples for chromium, lead, sulfate and specific conductance. If at the end of four (4) quarters no increase in these constituents or parameters occurs, reduce monitoring to biannually for two additional years. Locations for proposed monitoring wells are indicated on Sheet 1. Figure 6 is a general design for proposed monitoring wells.

5. If monitoring reveals continued outward migration of the polluted groundwater, the monitoring wells shall be used as interceptor wells and a pump test performed on each well by a hydrogeologist. All waters will be directed to the neutralization tank and treated for subsequent disposal.

III. METHODS OF INVESTIGATION

Preliminary data collection included a review of the regional geologic and hydrologic setting, readily available in maps and reports published by the state and U.S. geologic surveys. These included: U.S. Geological Survey Water Supply Paper 943; U.S.G.S. Professional Paper 550-D; Scottsbluff County Test Hole Report; Groundwater Maps (1980); and others.

Information on soil conditions is available in the Soil Survey of Scottsbluff County, a U.S.D.A. Soil Conservation Service publication. Black and white air photos of the area were taken in 1977 and are available at a 1:48,000 scale. Well registration records are available at the State Department of Water Resources and provide drilling logs and water level information. Water quality data are available at the U.S.G.S., the Conservation and Survey Division, and State Health Department. Historical and operational data regarding the spent acid evaporation pond and plant processes were available at Lockwood Corporation.

Field investigation included auger borings at the site according to ASTM Designation D 1452-65 (revised 1980) and sampling by split-barrel sampler according to ASTM Designation D 1586-67 (see Sheet 1). Elevation and location surveys of the boreholes were done. Groundwater sampling from the boreholes was by PVC bailer according to ASTM Designation D 3370. Samples of the various wastes entering the pit were collected. RCRA Chain of Custody requirements for all water and waste sampling were followed. Laboratory analyses of soil and water chemistry were done according to standard methods.

IV. GEOLOGY

The city of Gering and the Lockwood plant site lie within the North Platte Valley in Scottsbluff County, Nebraska. This area is within the High Plains division of the Great Plains physiographic province. The North Platte Valley was formed from the dissection of the High Plains by the North Platte River and its tributaries. The river and its tributaries have eroded through more than 1,000 feet of tertiary-age sediments. The North Platte River flows from northwest to southeast through Scottsbluff County. The plant site is located approximately two miles south of the river. The river is locally flanked to the north and south by remnants of high terraces which form the valley walls. Some terraces are copped by a thin mantle of gravel which has protected them from erosion. The Lockwood site exists on the Quaternary alluvium (stream-deposited sediment) of the North Platte River's flood plain.

Generally, Cretaceous and Tertiary-age material form the High Plains and underlie this site. This material consists of semi-consolidated to consolidated gravel, sand, silt and clay which was deposited by rivers flowing from the Rocky Mountains. Five formations are representative of the High Plains of Scottsbluff County. The formations exposed in the county are (in ascending stratigraphic order) the Lance, Chadron, Brule, Gering and Arikaree. Not all of these formations were encountered during this investigation. The Gering and Arikaree formations form the upland plateaus and the bluffs and are not present at the site. The sandstone and clay of the Lance formation and the overlying Chadron siltstone are too deep to be of significance in this investigation. This work dealt with the erosional surface of the Brule formation and its thin mantle of younger alluvial sediment. The Brule underlies the Lockwood site. Figure 2, modified from U.S.G.S. Water Supply Paper 943, summarizes the geology of the area. The Brule formation is a light-colored silt or siltstone, frequently massive in character (that is, not exhibiting bedding or layering). Much of the formation was deposited by ancient streams. Some channel sands occur within the siltstone and volcanic ash accumulated locally, possibly in bodies of standing or slow-moving water (pools in the stream or ponds). Part of the Brule probably consists of eolian (wind-blown) sediment. Grain-size analyses of parts of the Brule are similar in some respects to a loess, being fairly uniform and predominantly silt-sized. The Brule is calcareous, and some lime-cemented zones have greater resistance to weathering, erosion, and the transmission of water. While generally massive or finely laminated, the Brule may weather into a blocky or slabby structure, developing a secondary permeability. This accounts for its ability to transmit water in moderate to large amounts. These openings in the rock have in the past been attributed to fractures (Wenzel, Cady and Waite 1946) but are now thought to occur mainly as natural "piping" (Lowry, 1966). Piping is a process by which channels or conduits are opened by the action of moving water on rocks with limited cohesion.

The alluvium mantling the Brule formation consists of both coarse (sand and gravel) and fine (silt and clay) material. Distribution of the various sediments is complex and related in part to the energy and gradient of the stream, channel shape and source of sediment. While terrace fill and recent alluvium may exceed 200 feet in places along the North Platte Valley in the vicinity of Gering and the Lockwood plant these unconsolidated deposits mantling the Brule bedrock are generally 20 feet thick or less.

APPENDIX II

June 7, 1984

Mr. Jerry Carpenter
Gering Water Dept.
1450 10th Street
Gering, Nebraska 69341

Dear Mr. Carpenter:

I have enclosed the water quality analysis data for Gering's municipal well #6 and two private wells in the area.

The metal concentration in Table 3 reflect only the dissolved portion in the water. The metal concentrations in Table 4 reflect the amounts dissolved in the water and attached to the sediment. Table 5 lists the Drinking Water Standards for the respective metals.

As you can see, all the metal concentrations are within the maximum recommended levels. If you have any questions, please contact me at (402) 471-4230.

Sincerely,

Bill Imig
Environmental Specialist
Surveillance & Analysis Section
Water & Waste Management Division

BI/tsk
enclosure

APPENDIX III

August 27, 1984

Nebraska Department of Environmental Control
Box 94877, State House Station
301 Centennial Mall South
Lincoln, Nebraska 68509

ATTENTION: Mike Steffensmeier, Acting Chief
Hazardous Waste Management Section

REFERENCE: Lockwood Corporation Case No. 756
Status Report on Hydrogeologic Investigation

Dear Mr. Steffensmeier:

A preliminary hydrogeologic investigation has been performed at Lockwood Corporation, Gering, Nebraska. The investigation is in response to Nebraska Department of Environmental Control, Administrative Order of June 20, 1984, item 3.

An extension was requested and received with deadline set at August 27th, 1984. This letter represents the status report of findings and conclusions to date concerning the groundwater setting in and about the Lockwood spent acid lagoons.

The purpose of the investigation were to determine 1) if toxic levels of leachable metals had reached the aquifer, 2) if so, the nature of the metals excursion and 3) remedial action for aquifer restoration.

Included in the investigation are the following items:

1. Review of existing soil and geologic reports and review of registered well logs.

2. A subsurface investigation by auger borings at the site according to ASTM Designation D 1452-65 (Revised 1980) and sampling with split-barrel sampler according to ASTM Designation D 1586-67, Groundwater sampling in bore holes by PVC bailer according to ASTM Designation D 3370.

3. Analysis of groundwater samples include cadmium, chromium, zinc, iron, sulfates in mg/1 and the parameters: temperature, pH and specific conductance.

Please find attached Sheet 1, a boring plan for the site, Table 1, Analysis of Lagoon and

Groundwater Samples complied from NDEC Investigation Report dated April 18, 1984 and HWS laboratory analysis of August 15, 1984. These documents are preliminary and subject to addition and revision in the final report.

PRELIMINARY FINDINGS

The results of a preliminary subsurface investigation within 150 radial feet of the spent acid lagoons revealed a three unit aquifer consisting of a upper unit (1) of silty and sandy clay ranging in thickness from 7.0 ft to 10.0 ft; a sand and gravel unit (2) composed of a combination of siliceous and carbonate grains and a silty clay/gravely clay unit (3) the weathered surface of the Brule Formation. Unit 2 ranges in thickness from 10 ft to 12 ft and contained interbedded silty and sandy clays. Unit 3 acts as an aquitard at the site and was penetrated at each boring at a depth of between 19.5 ft and 25.0 ft.

Groundwater occurrence at the site is unconfined in unit 2 and semiconfined to confined in the Brule Formation underlying the weathered unit 3. Flow in unit 2 is regionally toward the North Platte River but locally north to south. This flow results from recharge at the north property boundary by an irrigation canal and discharge to the south by the Gering Drain. Flow in the Brule Fm. was not assessed.

Local wells including the Gering Municipal Well #77-1 and several registered irrigation wells all are deeply penetrating the Brule Fm. This is the consequence of low transmissivity in this aquifer unit.

Groundwater quality in the Brule Fm. is variable but generally calcium bicarbonate and sodium bicarbonate according to U.S. Geologic Survey Water-Supply Paper 943, 1946. Nebraska Department of Health records indicate the Gering Municipal well has sodium-bicarbonate type water. We requested sampling of this well on 8/6/84 and testing specifically for chromium.

The preliminary groundwater analysis results are as follows:

1. Chromium concentrations range from 0.05 mg/1 to 0.15 mg/1 within 150 radial ft of the lagoons.

2. Chromium concentration diminishes significantly away from the lagoons in areas of occurrence. (see Table 1 and Sheet 1).

   a. B-8, cr = 0.15 mg/1 to B-11, cr = 0.10 mg/1; separation = 120 ft
   b. B-1, cr = 0.10 mg/1; B-9 cr 0.05 mg/1; separation 48 ft

3. Groundwater conditions are alkaline and suitable to precipitation of chromium from solution as a salt.

4. Zinc concentrations range from 0.01 mg/1 to 1.81 mg/1.

5. Additional borings and sampling at greater radial separation will be necessary to determine the furthest occurrence of chromium from the lagoons.

6. Lack of etching on carbonate grains in units 1 and 2 indicate alkaline conditions and not acid corrosion of the grains.

CONCLUSIONS & RECOMMENDATIONS

Our conclusions are based on a limited number borings. We are currently extending the radius of investigation in all directions and expect to have the results of groundwater sample analysis in two to four weeks time.

Based on data to date we have made the following conclusions:

1. Lagoon leakage occurred in the north pond in association with clay liner erosion at the terminus of the discharge pipe.

2. Naturally high alkalinity provides a groundwater environment suitable for precipitation of heavy metals.

3. Dilution and/or precipitation of chromium from groundwater occurs within the immediate vicinity of the lagoons. Further investigation is in progress to determine the concentration gradient.

4. Zinc and cadmium, although present at high concentrations in the pond sludges, precipitate out of infiltrating solutions in the alkaline soil and groundwater.

5. Absence of etching on carbonate grains indicate decay of the infiltrating spend acid front to normal or alkaline pH in the upper few inches to feet of the underlying soils. This is consistent with the SCS soil survey of Scottsbluff County - 1968 which indicates the pre-site conditions as a wet variant of the Mitchell Silt loam and "scabby". This was a natural groundwater discharge site and as a result had developed a high concentration of salts prior to use due to evaporation.

We recommend the following actions:

1. Complete the subsurface investigation at 200 to 250 radial feet from the ponds.

2. Instigate closure of the spent acid lagoons.

3. Install four (4) groundwater monitoring wells fully penetrating unit 2. Sample these wells on a quarterly basis for 1 year and test the samples for the presence of chromium, cadmium, zinc, iron, sulfates, pH and specific conductance. If at the end of one year, no evidence exists of significant increase in these constituents or

APPENDIX B

Technology Laboratory Analytical Report - March 11, 1994 Sampling

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collings, Colorado 80525

Sample ID: MW-7

Lab ID: 7719-1

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/15/94

Project No.: R001-01-100

Method: EPA-8240

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
75-05-8	Acetonitrile	<10	107-02-8	Acrolein	<5
107-18-6	Allyl Alcohol	<10	107-05-1	Allyl Chloride	<5
100-44-7	Benzyl Chloride	<10	598-31-2	Bromoacetone	<10
107-07-3	2-Chloroethanol	<10	126-99-8	Chloroprene	<5
106-93-4	1,2-Dibromoethane	<0.5	96-12-8	1,2-Dibromo-3-chloropropane	<10
764-41-0	1,4-Dichloro-2-butene	<10	74-95-3	Dibromomethane	<5
123-91-1	1,4-Dioxane	<10	75-71-8	Dichlorodifluoromethane	<5
97-63-2	Ethyl Methacrylate	<0.5	96-23-1	1,3-Dichloro-2-propanol	<10
74-88-4	Iodomethane	<0.5	78-83-1	Isobutyl Alcohol	<50
74-88-4	Methyl Iodide	<0.5	126-98-7	Methacrylonitrile	<0.5
76-01-7	Pentachloroethane	<0.5	80-62-6	Methyl Methacrylate	<0.5
107-12-0	Propionitrile	<10	109-06-8	2-Picoline	<0.5
110-86-1	Pyridine	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	96-18-4	1,2,3-Trichloropropane	<10
74-87-3	Chloromethane	<0.5	108-05-4	Vinyl Acetate	<0.5
74-83-9	Bromomethane	<0.5	78-87-5	1,2-Dichloropropane	<0.5
75-01-4	Vinyl Chloride	<0.5	542-75-6	Trans-1,3-Dichloropropene	<0.5
75-00-3	Chloroethane	<0.5	79-01-6	Trichloroethene	<0.5
75-9-2	Methylene Chloride	<0.5	124-48-1	Dibromochloromethane	<0.5
75-35-4	1,1-Dichloroethene	<0.5	79-00-5	1,1,2-Trichloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	71-43-2	Benzene	<0.5

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

Sample ID: MW-7 Project No.: R001-01-100

Lab ID: 7719-1 Method: EPA-8240

156-60-5	Trans-1,2-Dichloroethene	<0.5	542-75-6	Cis-1,3-Dichloropropene	<0.5
67-66-3	Chloroform	<0.5	591-78-6	2-Hexanone	<5
107-06-2	1,2-Dichloroethane	<0.5	75-25-2	Bromoform	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	127-18-4	Tetrachloroethene	<0.5
56-23-5	Carbon Tetrachloride	<0.5	79-34-5	1,1.2-2-Tetrachloroethane	<0.5
75-27-4	Bromodichloromethane	<0.5	108-88-3	Toluene	<0.5
67-64-1	Acetone	<5	108-90-7	Chlorobenzene	<0.5
78-93-3	2-Butanone	<5	100-41-4	Ethylbenzene	<0.5
75-15-0	Carbon Disulfide	<0.5	108-10-1	4-Methyl-2-pentanone	<5
100-42-5	Styrene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
107-13-1	Acrylonitrile	<5	541-73-1	1,3-Dichlorobenzene	<0.5
110-75-8	2-Chloroethylvinyl Ether	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
				Total Xylenes	<0.5

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
Dibromofluoromethane	103	76-114
Toluene-d_8	99	88-110
4-Bromofluorobenzene	96	86-115

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/17/94

Sample ID: MW-7

Project No.: R001-01-100

Lab ID: 7719-1

Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
83-32-9	Acenaphthene	<10	100-51-6	Benzyl Alcohol	<20
208-96-8	Acenaphthylene	<10	111-91-1	Bis(2-chloroethoxy)methane	<10
98-86-2	Acetophenone	<10	111-44-4	Bis(2-chloroethyl)ether	<10
53-96-3	2-Acetylaminofluorene	<10	39638-2-9	Bis(2-chloroisopropyl)ether	<10
92-67-1	4-Aminobiphenyl	<10	117-81-7	Bis(2-ethylhexyl)phthalate	<10
62-53-3	Aniline	<10	101-55-3	4-Bromophenyl Phenyl Ether	<20
120-12-7	Anthrancene	<10	85-68-7	Butyl Benzyl Phthalate	<20
140-57-8	Aramite	<10	106-47-8	4-Chloroaniline	<10
92-87-5	Benzidine	<10	510-15-6	Chlorobenzilate	<20
65-85-0	Benzoic Acid	<50	59-50-7	4-Chloro-3-methylphenol	<10
56-55-3	Benz(a)anthrance	<10	91-58-7	2-Chloronaphthalene	<10
205-99-2	Benzo(b)fluoranthene	<10	95-57-8	2-Chlorophenol	<10
207-08-9	Benzo(k)fluoranthene	<10	7005-72-3	4-Chlorophenyl Phenyl Ether	<10
191-24-2	Benzo(g,h,i)perylene	<10	218-01-9	Chrysene	<10
50-32-8	Benzo(a)pyrene	<10	2303-16-4	Diallate	<10
132-64-9	Dibenzofuran	<10	53-70-3	Dibenz(a,h)anthrancene	<10
84-74-2	Di-n-butylphthalate	<10	62-50-0	Ethyl Methanesulfonate	<10
91-94-1	3,3'-Dichlorobenzidine	<20	52-85-7	Famphur	<10
120-83-2	2,4-Dichlorophenol	<10	206-44-0	Fluoranthene	<10
87-65-0	2,6-Dichlorophenol	<10	86-73-7	Fluorene	<10
84-6-2	Diethyl Phthalate	<10	118-74-1	Hexachlorobenzene	<10
60-51-5	Dimethoate	<10	87-68-3	Hexachlorobutadiene	<10
60-11-7	Dimethylaminoazobenzene	<10	77-47-4	Hexachlorocyclopentadiene	<10
57-97-6	7,12-Dimethylbenz(a)-anathracene	<10	67-72-1	Hexachloroethane	<10
			70-30-4	Hexachlorophene	<10
119-93-7	3,3'-Dimethylbenzidine	<10	1888-71-7	Hexachloropropene	<10
122-09-8	α,α-Dimethylphenethylamine	<10	193-39-5	Indeno(1,2,3-cd)pyrene	<10
105-67-9	2,4-Dimethylphenol	<10	465-73-6	Isodrin	<10
131-11-3	Dimethyl Phthalate	<10	78-59-1	Isophorone	<10
528-29-0	1,3-Dinitrobenzene	<10	120-58-1	Isosafrole	<10
534-52-1	4,6-Dinitro 2-Methylphenol	<50	143-50-0	Kepone	<10
51-28-5	2,4-Dinitrophenol	<50	91-80-5	Methapyrilene	<10
121-14-2	2,4-Dinitrotoluene	<10	56-49-5	3-Methylcholanthrene	<10
606-20-2	2,6-Dinitrotoluene	<10	66-27-3	Methylmethanesulfonate	<10

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

Sample ID: MW-7 Project No.: R001-01-100

Lab ID: 7719-1 Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
88-85-7	Dinoseb	<10	91-57-6	2-Methylnaphthalene	<10
122-39-4	Diphenylamine	<10	298-00-0	Methyl Parathion	<10
117-84-0	Di-n-octylphthalate	<10	95-48-7	2-Methylphenol	<10
298-04-4	Disulfoton	<10	108-39-4	3-Methylphenol	<10
91-20-3	Naphthalene	<10	106-44-5	4-Methylphenol	<10
130-15-4	1,4-Naphthoquinone	<10	298-02-2	Phorate	<10
134-32-7	1-Naphthylamine	<10	23950-58-5	Pronamide	<10
91-59-8	2-Naphthylamine	<10	129-00-0	Pyrene	<10
88-74-4	2-Nitroaniline	<50	10-86-1	Pyridine	<10
99-09-2	3-Nitroaniline	<50	94-59-7	Safrole	<10
100-01-6	4-Nitroaniline	<50	95-94-3	1,2,4,5-Tetrachlorobenzene	<10
98-95-3	Nitrobenzene	<10	58-90-2	2,3,4,6-Tetrachlorophenol	<10
88-75-5	2-Nitrophenol	<50	107-49-3	Tetraethyl Pyrophosphate	<10
100-02-7	4-Nitrophenol	<50	297-97-2	Tionazine	<10
99-55-8	5-Nitro-o-toluidine	<10	95-53-4	o-Toluidine	<10
56-57-5	Nitroquinoline-1-oxide	<10	120-82-1	1,2,4-Trichlorobenzene	<10
924-16-3	N-Nitrosodibutylamine	<10	95-95-4	2,4,5-Trichlorophenol	<10
55-18-5	N-Nitrosodiethylamine	<10	88-06-2	2,4,6-Trichlorophenol	<10
62-75-9	N-Nitrosodimethylamine	<10	126-68-1	0,0,0-Triethyl Phosphorothioate	<10
10595-95-6	N-Nitrosomethylethylamine	<10	608-93-5	Pentachlorobenzene	<10
86-30-6	N-Nitrosodiphenylamine	<10	82-68-8	Pentachloronitrobenzene	<10
621-64-7	N-Nitrosodi-n-propylamine	<10	87-86-5	Pentachlorophenol	<50
59-89-2	N-Nitrosomorpholine	<10	62-44-2	Phenacetin	<10
100-75-4	N-Nitrosopiperidine	<10	85-01-8	Phenanthrene	<10
930-55-2	N-Nitrosopyrrolidine	<10	108-95-2	Phenol	<10
56-38-2	Parathion	<10	106-50-3	1,4-Phenylenediamine	<10

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
2-Fluorobiphenyl	73	43-116
2-Fluorophenol	41	21-100
Nitrobenzene-d_5	58	35-114
Phenol-d_6	25	10-94
Terphenyl-d_{14}	86	33-141
2,4,6-Tribromophenol	63	10-123

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/25/94

Sample ID: MW-7

Project No.: R001-01-100

Lab ID: 7719-1

Method: EPA-8080

Cas Number	Compound Analyzed	Concentration µg/L
319-84-6	Alpha-BHC	<0.05
319-85-7	Beta-BHC	<0.05
318-86-8	Delta-BHC	<0.05
58-89-9	Gamma-BHC (Lindane)	<0.05
76-44-8	Heptachlor	<0.05
309-00-2	Aldrin	<0.05
1024-57-3	Heptachlor Epoxide	<0.05
959-98-8	Endosulfan I	<0.05
60-57-1	Dieldrin	<0.10
72-55-9	4,4'-DDE	<0.10
72-20-8	Endrin	<0.10
33213-65-9	Endosulfan II	<0.10
72-54-8	4,4'-DDD	<0.10
1031-07-8	Endosulfan Sulfate	<0.10
50-29-3	4,4'-DDT	<0.10
72-43-5	Methoxychlor	<0.5
7421-93-4	Endrin Aldehyde	<0.5
53494-70-5	Endrin Ketone	<0.5
57-74-9	Chlordane	<0.5
8001-35-2	Toxaphene	<1.0
12674-11-2	Aroclor-1016	<1.0
11104-28-2	Aroclor-1221	<1.0
11141-16-5	Aroclor-1232	<1.0
53469-21-9	Aroclor-1242	<1.0
12672-29-6	Aroclor-1248	<1.0
11097-69-1	Aroclor-1254	<1.0
11096-82-5	Aroclor-1260	<1.0

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sample ID: MW-7

Lab ID: 7719-1

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/28/94

Project No.: R001-01-100

Method: EPA-8150

CAS Number	Compound Analyzed	Concentration (µg/L)
94-75-7	2,4-D	<1
93-72-1	2,4,5-TP	<1
88-85-7	Dinoseb	<1
93-76-5	2,4,5-T	<2

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/22/94

Sample ID: MW-7

Project No.: R001-01-100

Lab ID: 7719-1

Compound Analyzed	Concentration (mg/L)	Method (Detection Limit)
Total Antimony	<0.006	EPA-7040 (0.006 mg/L)
Total Arsenic	0.023	EPA-7060 (0.005 mg/L)
Total Barium	<0.1	EPA-7080 (0.1 mg/L)
Total Beryllium	<0.004	EPA-7090 (0.004 mg/L)
Total Cadmium	<0.002	EPA-7130 (0.002 mg/L)
Total Chromium	<0.01	EPA-7190 (0.01 mg/L)
Total Copper	<0.01	EPA-7210 (0.01 mg/L)
Total Cobalt	0.013	EPA-7200 (0.01 mg/L)
Total Lead	<0.01	EPA-7420 (0.01 mg/L)
Total Tin	<0.05	EPA-7870 (0.05 mg/L)
Total Thallium	<0.002	EPA-7840 (0.002 mg/L)
Total Selenium	<0.005	EPA-7741 (0.005 mg/L)
Total Silver	<0.01	EPA-7760 (0.01 mg/L)
Total Mercury	<0.002	EPA-7470 (0.002 mg/L)
Total Nickel	<0.01	EPA-7520 (0.01 mg/L)
Total Vanadium	<0.05	EPA-7910 (0.05 mg/L)
Total Zinc	<0.01	EPA-7950 (0.01 mg/L)
Cyanide	<0.1	EPA-335.1 (0.1 mg/L)
Sulfide	<1	EPA-376.1 (1 mg/L)

COMMENT: All samples analyzed for total metals were concentrated by a factor of 10x.

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collings, Colorado 80525

Sample ID: MW-6

Lab ID: 7719-2

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/15/94

Project No.: R001-01-100

Method: EPA-8240

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
75-05-8	Acetonitrile	<10	107-02-8	Acrolein	<5
107-18-6	Allyl Alcohol	<10	107-05-1	Allyl Chloride	<5
100-44-7	Benzyl Chloride	<10	598-31-2	Bromoacetone	<10
107-07-3	2-Chloroethanol	<10	126-99-8	Chloroprene	<5
106-93-4	1,2-Dibromoethane	<0.5	96-12-8	1,2-Dibromo-3-chloropropane	<10
764-41-0	1,4-Dichloro-2-butene	<10	74-95-3	Dibromomethane	<5
123-91-1	1,4-Dioxane	<10	75-71-8	Dichlorodifluoromethane	<5
97-63-2	Ethyl Methacrylate	<0.5	96-23-1	1,3-Dichloro-2-propanol	<10
74-88-4	Iodomethane	<0.5	78-83-1	Isobutyl Alcohol	<50
74-88-4	Methyl Iodide	<0.5	126-98-7	Methacrylonitrile	<0.5
76-01-7	Pentachloroethane	<0.5	80-62-6	Methyl Methacrylate	<0.5
107-12-0	Propionitrile	<10	109-06-8	2-Picoline	<0.5
110-86-1	Pyridine	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	96-18-4	1,2,3-Trichloropropane	<10
74-87-3	Chloromethane	<0.5	108-05-4	Vinyl Acetate	<0.5
74-83-9	Bromomethane	<0.5	78-87-5	1,2-Dichloropropane	<0.5
75-01-4	Vinyl Chloride	<0.5	542-75-6	Trans-1,3-Dichloropropene	<0.5
75-00-3	Chloroethane	<0.5	79-01-6	Trichloroethene	<0.5
75-9-2	Methylene Chloride	<0.5	124-48-1	Dibromochloromethane	<0.5

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

Sample ID: MW-6 Project No.: R001-01-100

Lab ID: 7719-2 Method: EPA-8240

75-35-4	1,1-Dichloroethene	<0.5	79-00-5	1,1,2-Trichloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	71-43-2	Benzene	<0.5
156-60-5	Trans-1,2-Dichloroethene	<0.5	542-75-6	Cis-1,3-Dichloropropene	<0.5
67-66-3	Chloroform	<0.5	591-78-6	2-Hexanone	<5
107-06-2	1,2-Dichloroethane	<0.5	75-25-2	Bromoform	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	127-18-4	Tetrachloroethene	<0.5
56-23-5	Carbon Tetrachloride	<0.5	79-34-5	1,1.2-2-Tetrachloroethane	<0.5
75-27-4	Bromodichloromethane	<0.5	108-88-3	Toluene	<0.5
67-64-1	Acetone	<5	108-90-7	Chlorobenzene	<0.5
78-93-3	2-Butanone	<5	100-41-4	Ethylbenzene	<0.5
75-15-0	Carbon Disulfide	<0.5	108-10-1	4-Methyl-2-pentanone	<5
100-42-5	Styrene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
107-13-1	Acrylonitrile	<5	541-73-1	1,3-Dichlorobenzene	<0.5
110-75-8	2-Chloroethylvinyl Ether	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
				Total Xylenes	<0.5

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
Dibromofluoromethane	95	76-114
Toluene-d_8	100	88-110
4-Bromofluorobenzene	98	86-115

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/17/94

Sample ID: MW-6

Project No.: R001-01-100

Lab ID: 7719-2

Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
83-32-9	Acenaphthene	<10	100-51-6	Benzyl Alcohol	<20
208-96-8	Acenaphthylene	<10	111-91-1	Bis(2-chloroethoxy)methane	<10
98-86-2	Acetophenone	<10	111-44-4	Bis(2-chloroethyl)ether	<10
53-96-3	2-Acetylaminofluorene	<10	39638-2-9	Bis(2-chloroisopropyl)ether	<10
92-67-1	4-Aminobiphenyl	<10	117-81-7	Bis(2-ethylhexyl)phthalate	<10
62-53-3	Aniline	<10	101-55-3	4-Bromophenyl Phenyl Ether	<20
120-12-7	Anthrancene	<10	85-68-7	Butyl Benzyl Phthalate	<20
140-57-8	Aramite	<10	106-47-8	4-Chloroaniline	<10
92-87-5	Benzidine	<10	510-15-6	Chlorobenzilate	<20
65-85-0	Benzoic Acid	<50	59-50-7	4-Chloro-3-methylphenol	<10
56-55-3	Benz(a)anthrance	<10	91-58-7	2-Chloronaphthalene	<10
205-99-2	Benzo(b)fluoranthene	<10	95-57-8	2-Chlorophenol	<10
207-08-9	Benzo(k)fluoranthene	<10	7005-72-3	4-Chlorophenyl Phenyl Ether	<10
191-24-2	Benzo(g,h,i)perylene	<10	218-01-9	Chrysene	<10
50-32-8	Benzo(a)pyrene	<10	2303-16-4	Diallate	<10
132-64-9	Dibenzofuran	<10	53-70-3	Dibenz(a,h)anthrancene	<10
84-74-2	Di-n-butylphthalate	<10	62-50-0	Ethyl Methanesulfonate	<10
91-94-1	3,3'-Dichlorobenzidine	<20	52-85-7	Famphur	<10
120-83-2	2,4-Dichlorophenol	<10	206-44-0	Fluoranthene	<10
87-65-0	2,6-Dichlorophenol	<10	86-73-7	Fluorene	<10
84-6-2	Diethyl Phthalate	<10	118-74-1	Hexachlorobenzene	<10
60-51-5	Dimethoate	<10	87-68-3	Hexachlorobutadiene	<10
60-11-7	Dimethylaminoazobenzene	<10	77-47-4	Hexachlorocyclopentadiene	<10
57-97-6	7,12-Dimethylbenz(a)-anathracene	<10	67-72-1	Hexachloroethane	<10
			70-30-4	Hexachlorophene	<10
119-93-7	3,3'-Dimethylbenzidine	<10	1888-71-7	Hexachloropropene	<10
122-09-8	α,α-Dimethylphenethylamine	<10	193-39-5	Indeno(1,2,3-cd)pyrene	<10
105-67-9	2,4-Dimethylphenol	<10	465-73-6	Isodrin	<10
131-11-3	Dimethyl Phthalate	<10	78-59-1	Isophorone	<10
528-29-0	1,3-Dinitrobenzene	<10	120-58-1	Isosafrole	<10
534-52-1	4,6-Dinitro 2-Methylphenol	<50	143-50-0	Kepone	<10
51-28-5	2,4-Dinitrophenol	<50	91-80-5	Methapyrilene	<10
121-14-2	2,4-Dinitrotoluene	<10	56-49-5	3-Methylcholanthrene	<10
606-20-2	2,6-Dinitrotoluene	<10	66-27-3	Methylmethanesulfonate	<10

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

Sample ID: MW-6 Project No.: R001-01-100

Lab ID: 7719-2 Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
88-85-7	Dinoseb	<10	91-57-6	2-Methylnaphthalene	<10
122-39-4	Diphenylamine	<10	298-00-0	Methyl Parathion	<10
117-84-0	Di-n-octylphthalate	<10	95-48-7	2-Methylphenol	<10
298-04-4	Disulfoton	<10	108-39-4	3-Methylphenol	<10
91-20-3	Naphthalene	<10	106-44-5	4-Methylphenol	<10
130-15-4	1,4-Naphthoquinone	<10	298-02-2	Phorate	<10
134-32-7	1-Naphthylamine	<10	23950-58-5	Pronamide	<10
91-59-8	2-Naphthylamine	<10	129-00-0	Pyrene	<10
88-74-4	2-Nitroaniline	<50	10-86-1	Pyridine	<10
99-09-2	3-Nitroaniline	<50	94-59-7	Safrole	<10
100-01-6	4-Nitroaniline	<50	95-94-3	1,2,4,5-Tetrachlorobenzene	<10
98-95-3	Nitrobenzene	<10	58-90-2	2,3,4,6-Tetrachlorophenol	<10
88-75-5	2-Nitrophenol	<50	107-49-3	Tetraethyl Pyrophosphate	<10
100-02-7	4-Nitrophenol	<50	297-97-2	Tionazine	<10
99-55-8	5-Nitro-o-toluidine	<10	95-53-4	o-Toluidine	<10
56-57-5	Nitroquinoline-1-oxide	<10	120-82-1	1,2,4-Trichlorobenzene	<10
924-16-3	N-Nitrosodibutylamine	<10	95-95-4	2,4,5-Trichlorophenol	<10
55-18-5	N-Nitrosodiethylamine	<10	88-06-2	2,4,6-Trichlorophenol	<10
62-75-9	N-Nitrosodimethylamine	<10	126-68-1	0,0,0-Triethyl Phosphorothioate	<10
10595-95-6	N-Nitrosomethylethylamine	<10	608-93-5	Pentachlorobenzene	<10
86-30-6	N-Nitrosodiphenylamine	<10	82-68-8	Pentachloronitrobenzene	<10
621-64-7	N-Nitrosodi-n-propylamine	<10	87-86-5	Pentachlorophenol	<50
59-89-2	N-Nitrosomorpholine	<10	62-44-2	Phenacetin	<10
100-75-4	N-Nitrosopiperidine	<10	85-01-8	Phenanthrene	<10
930-55-2	N-Nitrosopyrrolidine	<10	108-95-2	Phenol	<10
56-38-2	Parathion	<10	106-50-3	1,4-Phenylenediamine	<10

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
2-Fluorobiphenyl	86	43-116
2-Fluorophenol	88	21-100
Nitrobenzene-d_5	75	35-114
Phenol-d_6	66	10-94
Terphenyl-d_{14}	121	33-141
2,4,6-Tribromophenol	63	10-123

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/24/94

Sample ID: MW-6

Project No.: R001-01-100

Lab ID: 7719-2

Method: EPA-8080

Cas Number	Compound Analyzed	Concentration µg/L
319-84-6	Alpha-BHC	<0.05
319-85-7	Beta-BHC	<0.05
318-86-8	Delta-BHC	<0.05
58-89-9	Gamma-BHC (Lindane)	<0.05
76-44-8	Heptachlor	<0.05
309-00-2	Aldrin	<0.05
1024-57-3	Heptachlor Epoxide	<0.05
959-98-8	Endosulfan I	<0.05
60-57-1	Dieldrin	<0.10
72-55-9	4,4'-DDE	<0.10
72-20-8	Endrin	<0.10
33213-65-9	Endosulfan II	<0.10
72-54-8	4,4'-DDD	<0.10
1031-07-8	Endosulfan Sulfate	<0.10
50-29-3	4,4'-DDT	<0.10
72-43-5	Methoxychlor	<0.5
7421-93-4	Endrin Aldehyde	<0.5
53494-70-5	Endrin Ketone	<0.5
57-74-9	Chlordane	<0.5
8001-35-2	Toxaphene	<1.0
12674-11-2	Aroclor-1016	<1.0
11104-28-2	Aroclor-1221	<1.0
11141-16-5	Aroclor-1232	<1.0
53469-21-9	Aroclor-1242	<1.0
12672-29-6	Aroclor-1248	<1.0
11097-69-1	Aroclor-1254	<1.0
11096-82-5	Aroclor-1260	<1.0

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/28/94

Sample ID: MW-6

Project No.: R001-01-100

Lab ID: 7719-2

Method: EPA-8150

CAS Number	Compound Analyzed	Concentration (µg/L)
94-75-7	2,4-D	<1
93-72-1	2,4,5-TP	<1
88-85-7	Dinoseb	<1
93-76-5	2,4,5-T	<2

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/22/94

Sample ID: MW-6

Project No.: R001-01-100

Lab ID: 7719-2

Compound Analyzed	Concentration (mg/L)	Method (Detection Limit)
Total Antimony	<0.006	EPA-7040 (0.006 mg/L)
Total Arsenic	<0.005	EPA-7060 (0.005 mg/L)
Total Barium	<0.1	EPA-7080 (0.1 mg/L)
Total Beryllium	<0.004	EPA-7090 (0.004 mg/L)
Total Cadmium	<0.002	EPA-7130 (0.002 mg/L)
Total Chromium	<0.01	EPA-7190 (0.01 mg/L)
Total Copper	<0.01	EPA-7210 (0.01 mg/L)
Total Cobalt	<0.01	EPA-7200 (0.01 mg/L)
Total Lead	<0.01	EPA-7420 (0.01 mg/L)
Total Tin	<0.05	EPA-7870 (0.05 mg/L)
Total Thallium	<0.002	EPA-7840 (0.002 mg/L)
Total Selenium	<0.005	EPA-7741 (0.005 mg/L)
Total Silver	<0.01	EPA-7760 (0.01 mg/L)
Total Mercury	<0.002	EPA-7470 (0.002 mg/L)
Total Nickel	<0.01	EPA-7520 (0.01 mg/L)
Total Vanadium	<0.05	EPA-7910 (0.05 mg/L)
Total Zinc	0.07	EPA-7950 (0.01 mg/L)
Cyanide	<0.1	EPA-335.1 (0.1 mg/L)
Sulfide	<1	EPA-376.1 (1 mg/L)

COMMENT: All samples analyzed for total metals were concentrated by a factor of 10x.

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collings, Colorado 80525

Sample ID: MW-3

Lab ID: 7719-3

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/15/94

Project No.: R001-01-100

Method: EPA-8240

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
75-05-8	Acetonitrile	<10	107-02-8	Acrolein	<5
107-18-6	Allyl Alcohol	<10	107-05-1	Allyl Chloride	<5
100-44-7	Benzyl Chloride	<10	598-31-2	Bromoacetone	<10
107-07-3	2-Chloroethanol	<10	126-99-8	Chloroprene	<5
106-93-4	1,2-Dibromoethane	<0.5	96-12-8	1,2-Dibromo-3-chloropropane	<10
764-41-0	1,4-Dichloro-2-butene	<10	74-95-3	Dibromomethane	<5
123-91-1	1,4-Dioxane	<10	75-71-8	Dichlorodifluoromethane	<5
97-63-2	Ethyl Methacrylate	<0.5	96-23-1	1,3-Dichloro-2-propanol	<10
74-88-4	Iodomethane	<0.5	78-83-1	Isobutyl Alcohol	<50
74-88-4	Methyl Iodide	<0.5	126-98-7	Methacrylonitrile	<0.5
76-01-7	Pentachloroethane	<0.5	80-62-6	Methyl Methacrylate	<0.5
107-12-0	Propionitrile	<10	109-06-8	2-Picoline	<0.5
110-86-1	Pyridine	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	96-18-4	1,2,3-Trichloropropane	<10
74-87-3	Chloromethane	<0.5	108-05-4	Vinyl Acetate	<0.5
74-83-9	Bromomethane	<0.5	78-87-5	1,2-Dichloropropane	<0.5
75-01-4	Vinyl Chloride	<0.5	542-75-6	Trans-1,3-Dichloropropene	<0.5
75-00-3	Chloroethane	<0.5	79-01-6	Trichloroethene	<0.5
75-9-2	Methylene Chloride	<0.5	124-48-1	Dibromochloromethane	<0.5

TECHNOLOGY LABORATORY, INC

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

Sample ID: MW-3 Project No.: R001-01-100

Labe ID: 7719-3 Method: EPA-8240

75-35-4	1,1-Dichloroethene	<0.5	79-00-5	1,1,2-Trichloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	71-43-2	Benzene	<0.5
156-60-5	Trans-1,2-Dichloroethene	<0.5	542-75-6	Cis-1,3-Dichloropropene	<0.5
67-66-3	Chloroform	<0.5	591-78-6	2-Hexanone	<5
107-06-2	1,2-Dichloroethane	<0.5	75-25-2	Bromoform	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	127-18-4	Tetrachloroethene	<0.5
56-23-5	Carbon Tetrachloride	<0.5	79-34-5	1,1.2-2-Tetrachloroethane	<0.5
75-27-4	Bromodichloromethane	<0.5	108-88-3	Toluene	<0.5
67-64-1	Acetone	<5	108-90-7	Chlorobenzene	<0.5
78-93-3	2-Butanone	<5	100-41-4	Ethylbenzene	<0.5
75-15-0	Carbon Disulfide	<0.5	108-10-1	4-Methyl-2-pentanone	<5
100-42-5	Styrene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
107-13-1	Acrylonitrile	<5	541-73-1	1,3-Dichlorobenzene	<0.5
110-75-8	2-Chloroethylvinyl Ether	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
				Total Xylenes	<0.5

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
Dibromofluoromethane	100	76-114
Toluene-d_8	101	88-110
4-Bromofluorobenzene	99	86-115

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/17/94

Sample ID: MW-3

Project No.: R001-01-100

Lab ID: 7719-3

Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
83-32-9	Acenaphthene	<10	100-51-6	Benzyl Alcohol	<20
208-96-8	Acenaphthylene	<10	111-91-1	Bis(2-chloroethoxy)methane	<10
98-86-2	Acetophenone	<10	111-44-4	Bis(2-chloroethyl)ether	<10
53-96-3	2-Acetylaminofluorene	<10	39638-2-9	Bis(2-chloroisopropyl)ether	<10
92-67-1	4-Aminobiphenyl	<10	117-81-7	Bis(2-ethylhexyl)phthalate	<10
62-53-3	Aniline	<10	101-55-3	4-Bromophenyl Phenyl Ether	<20
120-12-7	Anthrancene	<10	85-68-7	Butyl Benzyl Phthalate	<20
140-57-8	Aramite	<10	106-47-8	4-Chloroaniline	<10
92-87-5	Benzidine	<10	510-15-6	Chlorobenzilate	<20
65-85-0	Benzoic Acid	<50	59-50-7	4-Chloro-3-methylphenol	<10
56-55-3	Benz(a)anthrance	<10	91-58-7	2-Chloronaphthalene	<10
205-99-2	Benzo(b)fluoranthene	<10	95-57-8	2-Chlorophenol	<10
207-08-9	Benzo(k)fluoranthene	<10	7005-72-3	4-Chlorophenyl Phenyl Ether	<10
191-24-2	Benzo(g,h,i)perylene	<10	218-01-9	Chrysene	<10
50-32-8	Benzo(a)pyrene	<10	2303-16-4	Diallate	<10
132-64-9	Dibenzofuran	<10	53-70-3	Dibenz(a,h)anthrancene	<10
84-74-2	Di-n-butylphthalate	<10	62-50-0	Ethyl Methanesulfonate	<10
91-94-1	3,3'-Dichlorobenzidine	<20	52-85-7	Famphur	<10
120-83-2	2,4-Dichlorophenol	<10	206-44-0	Fluoranthene	<10
87-65-0	2,6-Dichlorophenol	<10	86-73-7	Fluorene	<10
84-6-2	Diethyl Phthalate	<10	118-74-1	Hexachlorobenzene	<10
60-51-5	Dimethoate	<10	87-68-3	Hexachlorobutadiene	<10
60-11-7	Dimethylaminoazobenzene	<10	77-47-4	Hexachlorocyclopentadiene	<10
57-97-6	7,12-Dimethylbenz(a)-anathracene	<10	67-72-1	Hexachloroethane	<10
			70-30-4	Hexachlorophene	<10
119-93-7	3,3'-Dimethylbenzidine	<10	1888-71-7	Hexachloropropene	<10
122-09-8	α,α-Dimethylphenethylamine	<10	193-39-5	Indeno(1,2,3-cd)pyrene	<10
105-67-9	2,4-Dimethylphenol	<10	465-73-6	Isodrin	<10
131-11-3	Dimethyl Phthalate	<10	78-59-1	Isophorone	<10
528-29-0	1,3-Dinitrobenzene	<10	120-58-1	Isosafrole	<10
534-52-1	4,6-Dinitro 2-Methylphenol	<50	143-50-0	Kepone	<10
51-28-5	2,4-Dinitrophenol	<50	91-80-5	Methapyrilene	<10
121-14-2	2,4-Dinitrotoluene	<10	56-49-5	3-Methylcholanthrene	<10
606-20-2	2,6-Dinitrotoluene	<10	66-27-3	Methylmethanesulfonate	<10

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

Sample ID: MW-3 Project No.: R001-01-100

Lab ID: 7719-3 Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
88-85-7	Dinoseb	<10	91-57-6	2-Methylnaphthalene	<10
122-39-4	Diphenylamine	<10	298-00-0	Methyl Parathion	<10
117-84-0	Di-n-octylphthalate	<10	95-48-7	2-Methylphenol	<10
298-04-4	Disulfoton	<10	108-39-4	3-Methylphenol	<10
91-20-3	Naphthalene	<10	106-44-5	4-Methylphenol	<10
130-15-4	1,4-Naphthoquinone	<10	298-02-2	Phorate	<10
134-32-7	1-Naphthylamine	<10	23950-58-5	Pronamide	<10
91-59-8	2-Naphthylamine	<10	129-00-0	Pyrene	<10
88-74-4	2-Nitroaniline	<50	10-86-1	Pyridine	<10
99-09-2	3-Nitroaniline	<50	94-59-7	Safrole	<10
100-01-6	4-Nitroaniline	<50	95-94-3	1,2,4,5-Tetrachlorobenzene	<10
98-95-3	Nitrobenzene	<10	58-90-2	2,3,4,6-Tetrachlorophenol	<10
88-75-5	2-Nitrophenol	<50	107-49-3	Tetraethyl Pyrophosphate	<10
100-02-7	4-Nitrophenol	<50	297-97-2	Tionazine	<10
99-55-8	5-Nitro-o-toluidine	<10	95-53-4	o-Toluidine	<10
56-57-5	Nitroquinoline-1-oxide	<10	120-82-1	1,2,4-Trichlorobenzene	<10
924-16-3	N-Nitrosodibutylamine	<10	95-95-4	2,4,5-Trichlorophenol	<10
55-18-5	N-Nitrosodiethylamine	<10	88-06-2	2,4,6-Trichlorophenol	<10
62-75-9	N-Nitrosodimethylamine	<10	126-68-1	0,0,0-Triethyl Phosphorothioate	<10
10595-95-6	N-Nitrosomethylethylamine	<10	608-93-5	Pentachlorobenzene	<10
86-30-6	N-Nitrosodiphenylamine	<10	82-68-8	Pentachloronitrobenzene	<10
621-64-7	N-Nitrosodi-n-propylamine	<10	87-86-5	Pentachlorophenol	<50
59-89-2	N-Nitrosomorpholine	<10	62-44-2	Phenacetin	<10
100-75-4	N-Nitrosopiperidine	<10	85-01-8	Phenanthrene	<10
930-55-2	N-Nitrosopyrrolidine	<10	108-95-2	Phenol	<10
56-38-2	Parathion	<10	106-50-3	1,4-Phenylenediamine	<10

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
2-Fluorobiphenyl	61	43-116
2-Fluorophenol	61	21-100
Nitrobenzene-d_5	71	35-114
Phenol-d_6	50	10-94
Terphenyl-d_{14}	98	33-141
2,4,6-Tribromophenol	71	10-123

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/25/94

Sample ID: MW-3

Project No.: R001-01-100

Lab ID: 7719-3

Method: EPA-8080

Cas Number	Compound Analyzed	Concentration µg/L
319-84-6	Alpha-BHC	<0.05
319-85-7	Beta-BHC	<0.05
318-86-8	Delta-BHC	<0.05
58-89-9	Gamma-BHC (Lindane)	<0.05
76-44-8	Heptachlor	<0.05
309-00-2	Aldrin	<0.05
1024-57-3	Heptachlor Epoxide	<0.05
959-98-8	Endosulfan I	<0.05
60-57-1	Dieldrin	<0.10
72-55-9	4,4'-DDE	<0.10
72-20-8	Endrin	<0.10
33213-65-9	Endosulfan II	<0.10
72-54-8	4,4'-DDD	<0.10
1031-07-8	Endosulfan Sulfate	<0.10
50-29-3	4,4'-DDT	<0.10
72-43-5	Methoxychlor	<0.5
7421-93-4	Endrin Aldehyde	<0.5
53494-70-5	Endrin Ketone	<0.5
57-74-9	Chlordane	<0.5
8001-35-2	Toxaphene	<1.0
12674-11-2	Aroclor-1016	<1.0
11104-28-2	Aroclor-1221	<1.0
11141-16-5	Aroclor-1232	<1.0
53469-21-9	Aroclor-1242	<1.0
12672-29-6	Aroclor-1248	<1.0
11097-69-1	Aroclor-1254	<1.0
11096-82-5	Aroclor-1260	<1.0

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sample ID: MW-3

Lab ID: 7719-3

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/25/94

Project No.: R001-01-100

Method: EPA-8150

CAS Number	Compound Analyzed	Concentration (µg/L)
94-75-7	2,4-D	<1
93-72-1	2,4,5-TP	<1
88-85-7	Dinoseb	<1
93-76-5	2,4,5-T	<2

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/22/94

Sample ID: MW-3

Project No.: R001-01-100

Lab ID: 7719-3

Compound Analyzed	Concentration (mg/L)	Method (Detection Limit)
Total Antimony	<0.006	EPA-7040 (0.006 mg/L)
Total Arsenic	<0.005	EPA-7060 (0.005 mg/L)
Total Barium	<0.1	EPA-7080 (0.1 mg/L)
Total Beryllium	<0.004	EPA-7090 (0.004 mg/L)
Total Cadmium	<0.002	EPA-7130 (0.002 mg/L)
Total Chromium	<0.01	EPA-7190 (0.01 mg/L)
Total Copper	<0.01	EPA-7210 (0.01 mg/L)
Total Cobalt	<0.01	EPA-7200 (0.01 mg/L)
Total Lead	<0.01	EPA-7420 (0.01 mg/L)
Total Tin	<0.05	EPA-7870 (0.05 mg/L)
Total Thallium	<0.002	EPA-7840 (0.002 mg/L)
Total Selenium	<0.005	EPA-7741 (0.005 mg/L)
Total Silver	<0.01	EPA-7760 (0.01 mg/L)
Total Mercury	<0.002	EPA-7470 (0.002 mg/L)
Total Nickel	0.02	EPA-7520 (0.01 mg/L)
Total Vanadium	<0.05	EPA-7910 (0.05 mg/L)
Total Zinc	0.16	EPA-7950 (0.01 mg/L)
Cyanide	<0.1	EPA-335.1 (0.1 mg/L)
Sulfide	<1	EPA-376.1 (1 mg/L)

COMMENT: All samples analyzed for total metals were concentrated by a factor of 10x.

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collings, Colorado 80525

Sample ID: MW-4

Lab ID: 7719-4

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/15/94

Project No.: R001-01-100

Method: EPA-8240

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
75-05-8	Acetonitrile	<10	107-02-8	Acrolein	<5
107-18-6	Allyl Alcohol	<10	107-05-1	Allyl Chloride	<5
100-44-7	Benzyl Chloride	<10	598-31-2	Bromoacetone	<10
107-07-3	2-Chloroethanol	<10	126-99-8	Chloroprene	<5
106-93-4	1,2-Dibromoethane	<0.5	96-12-8	1,2-Dibromo-3-chloropropane	<10
764-41-0	1,4-Dichloro-2-butene	<10	74-95-3	Dibromomethane	<5
123-91-1	1,4-Dioxane	<10	75-71-8	Dichlorodifluoromethane	<5
97-63-2	Ethyl Methacrylate	<0.5	96-23-1	1,3-Dichloro-2-propanol	<10
74-88-4	Iodomethane	<0.5	78-83-1	Isobutyl Alcohol	<50
74-88-4	Methyl Iodide	<0.5	126-98-7	Methacrylonitrile	<0.5
76-01-7	Pentachloroethane	<0.5	80-62-6	Methyl Methacrylate	<0.5
107-12-0	Propionitrile	<10	109-06-8	2-Picoline	<0.5
110-86-1	Pyridine	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	96-18-4	1,2,3-Trichloropropane	<10
74-87-3	Chloromethane	<0.5	108-05-4	Vinyl Acetate	<0.5
74-83-9	Bromomethane	<0.5	78-87-5	1,2-Dichloropropane	<0.5
75-01-4	Vinyl Chloride	<0.5	542-75-6	Trans-1,3-Dichloropropene	<0.5
75-00-3	Chloroethane	<0.5	79-01-6	Trichloroethene	<0.5
75-9-2	Methylene Chloride	<0.5	124-48-1	Dibromochloromethane	<0.5

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

Sample ID: MW-4 Project No.: R001-01-100

Lab ID: 7719-4 Method: EPA-8260

75-35-4	1,1-Dichloroethene	<0.5	79-00-5	1,1,2-Trichloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	71-43-2	Benzene	<0.5
156-60-5	Trans-1,2-Dichloroethene	<0.5	542-75-6	Cis-1,3-Dichloropropene	<0.5
67-66-3	Chloroform	<0.5	591-78-6	2-Hexanone	<5
107-06-2	1,2-Dichloroethane	<0.5	75-25-2	Bromoform	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	127-18-4	Tetrachloroethene	<0.5
56-23-5	Carbon Tetrachloride	<0.5	79-34-5	1,1.2-2-Tetrachloroethane	<0.5
75-27-4	Bromodichloromethane	<0.5	108-88-3	Toluene	<0.5
67-64-1	Acetone	<5	108-90-7	Chlorobenzene	<0.5
78-93-3	2-Butanone	<5	100-41-4	Ethylbenzene	<0.5
75-15-0	Carbon Disulfide	<0.5	108-10-1	4-Methyl-2-pentanone	<5
100-42-5	Styrene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
107-13-1	Acrylonitrile	<5	541-73-1	1,3-Dichlorobenzene	<0.5
110-75-8	2-Chloroethylvinyl Ether	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
				Total Xylenes	<0.5

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
Dibromofluoromethane	101	76-114
Toluene-d_8	98	88-110
4-Bromofluorobenzene	92	86-115

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/17/94

Sample ID: MW-4

Project No.: R001-01-100

Lab ID: 7719-4

Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
83-32-9	Acenaphthene	<10	100-51-6	Benzyl Alcohol	<20
208-96-8	Acenaphthylene	<10	111-91-1	Bis(2-chloroethoxy)methane	<10
98-86-2	Acetophenone	<10	111-44-4	Bis(2-chloroethyl)ether	<10
53-96-3	2-Acetylaminofluorene	<10	39638-2-9	Bis(2-chloroisopropyl)ether	<10
92-67-1	4-Aminobiphenyl	<10	117-81-7	Bis(2-ethylhexyl)phthalate	<10
62-53-3	Aniline	<10	101-55-3	4-Bromophenyl Phenyl Ether	<20
120-12-7	Anthrancene	<10	85-68-7	Butyl Benzyl Phthalate	<20
140-57-8	Aramite	<10	106-47-8	4-Chloroaniline	<10
2-87-5	Benzidine	<10	510-15-6	Chlorobenzilate	<20
65-85-0	Benzoic Acid	<50	59-50-7	4-Chloro-3-methylphenol	<10
56-55-3	Benz(a)anthrance	<10	91-58-7	2-Chloronaphthalene	<10
205-99-2	Benzo(b)fluoranthene	<10	95-57-8	2-Chlorophenol	<10
207-08-9	Benzo(k)fluoranthene	<10	7005-72-3	4-Chlorophenyl Phenyl Ether	<10
191-24-2	Benzo(g,h,i)perylene	<10	218-01-9	Chrysene	<10
50-32-8	Benzo(a)pyrene	<10	2303-16-4	Diallate	<10
132-64-9	Dibenzofuran	<10	53-70-3	Dibenz(a,h)anthrancene	<10
84-74-2	Di-n-butylphthalate	<10	62-50-0	Ethyl Methanesulfonate	<10
91-94-1	3,3'-Dichlorobenzidine	<20	52-85-7	Famphur	<10
120-83-2	2,4-Dichlorophenol	<10	206-44-0	Fluoranthene	<10
87-65-0	2,6-Dichlorophenol	<10	86-73-7	Fluorene	<10
84-6-2	Diethyl Phthalate	<10	118-74-1	Hexachlorobenzene	<10
60-51-5	Dimethoate	<10	87-68-3	Hexachlorobutadiene	<10
60-11-7	Dimethylaminoazobenzene	<10	77-47-4	Hexachlorocyclopentadiene	<10
57-97-6	7,12-Dimethylbenz(a)-anathracene	<10	67-72-1	Hexachloroethane	<10
			70-30-4	Hexachlorophene	<10
119-93-7	3,3'-Dimethylbenzidine	<10	1888-71-7	Hexachloropropene	<10
122-09-8	α,α-Dimethylphenethylamine	<10	193-39-5	Indeno(1,2,3-cd)pyrene	<10
105-67-9	2,4-Dimethylphenol	<10	465-73-6	Isodrin	<10
131-11-3	Dimethyl Phthalate	<10	78-59-1	Isophorone	<10
528-29-0	1,3-Dinitrobenzene	<10	120-58-1	Isosafrole	<10
534-52-1	4,6-Dinitro 2-Methylphenol	<50	143-50-0	Kepone	<10
51-28-5	2,4-Dinitrophenol	<50	91-80-5	Methapyrilene	<10
121-14-2	2,4-Dinitrotoluene	<10	56-49-5	3-Methylcholanthrene	<10
06-20-2	2,6-Dinitrotoluene	<10	66-27-3	Methylmethanesulfonate	<10

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

PRIORITY POLLUTANT ANALYSIS
VOLATILE ORGANICS

Sample ID: MW-4 Project No.: R001-01-100

Lab ID: 7719-4 Method: EPA-8270

CAS Number	Compound Analyzed	Concentration µg/L	CAS Number	Compound Analyzed	Concentration µg/L
88-85-7	Dinoseb	<10	91-57-6	2-Methylnaphthalene	<10
122-39-4	Diphenylamine	<10	298-00-0	Methyl Parathion	<10
117-84-0	Di-n-octylphthalate	<10	95-48-7	2-Methylphenol	<10
298-04-4	Disulfoton	<10	108-39-4	3-Methylphenol	<10
91-20-3	Naphthalene	<10	106-44-5	4-Methylphenol	<10
130-15-4	1,4-Naphthoquinone	<10	298-02-2	Phorate	<10
134-32-7	1-Naphthylamine	<10	23950-58-5	Pronamide	<10
91-59-8	2-Naphthylamine	<10	129-00-0	Pyrene	<10
88-74-4	2-Nitroaniline	<50	10-86-1	Pyridine	<10
99-09-2	3-Nitroaniline	<50	94-59-7	Safrole	<10
100-01-6	4-Nitroaniline	<50	95-94-3	1,2,4,5-Tetrachlorobenzene	<10
98-95-3	Nitrobenzene	<10	58-90-2	2,3,4,6-Tetrachlorophenol	<10
8-75-5	2-Nitrophenol	<50	107-49-3	Tetraethyl Pyrophosphate	<10
100-02-7	4-Nitrophenol	<50	297-97-2	Tionazine	<10
99-55-8	5-Nitro-o-toluidine	<10	95-53-4	o-Toluidine	<10
56-57-5	Nitroquinoline-1-oxide	<10	120-82-1	1,2,4-Trichlorobenzene	<10
924-16-3	N-Nitrosodibutylamine	<10	95-95-4	2,4,5-Trichlorophenol	<10
55-18-5	N-Nitrosodiethylamine	<10	88-06-2	2,4,6-Trichlorophenol	<10
62-75-9	N-Nitrosodimethylamine	<10	126-68-1	0,0,0-Triethyl Phosphorothioate	<10
10595-95-6	N-Nitrosomethylethylamine	<10	608-93-5	Pentachlorobenzene	<10
86-30-6	N-Nitrosodiphenylamine	<10	82-68-8	Pentachloronitrobenzene	<10
621-64-7	N-Nitrosodi-n-propylamine	<10	87-86-5	Pentachlorophenol	<50
59-89-2	N-Nitrosomorpholine	<10	62-44-2	Phenacetin	<10
100-75-4	N-Nitrosopiperidine	<10	85-01-8	Phenanthrene	<10
930-55-2	N-Nitrosopyrrolidine	<10	108-95-2	Phenol	<10
56-38-2	Parathion	<10	106-50-3	1,4-Phenylenediamine	<10

SURROGATE RECOVERIES

Compound	% Recovery	% Rec Limits
2-Fluorobiphenyl	88	43-116
2-Fluorophenol	92	21-100
Nitrobenzene-d_5	69	35-114
Phenol-d_6	83	10-94
Terphenyl-d_{14}	49	33-141
2,4,6-Tribromophenol	26	10-123

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/25/94

Sample ID: MW-4

Project No.: R001-01-100

Lab ID: 7719-4

Method: EPA-8080

Cas Number	Compound Analyzed	Concentration µg/L
319-84-6	Alpha-BHC	<0.05
319-85-7	Beta-BHC	<0.05
318-86-8	Delta-BHC	<0.05
58-89-9	Gamma-BHC (Lindane)	<0.05
76-44-8	Heptachlor	<0.05
309-00-2	Aldrin	<0.05
1024-57-3	Heptachlor Epoxide	<0.05
959-98-8	Endosulfan I	<0.05
60-57-1	Dieldrin	<0.10
72-55-9	4,4'-DDE	<0.10
72-20-8	Endrin	<0.10
33213-65-9	Endosulfan II	<0.10
72-54-8	4,4'-DDD	<0.10
1031-07-8	Endosulfan Sulfate	<0.10
50-29-3	4,4'-DDT	<0.10
72-43-5	Methoxychlor	<0.5
7421-93-4	Endrin Aldehyde	<0.5
53494-70-5	Endrin Ketone	<0.5
57-74-9	Chlordane	<0.5
8001-35-2	Toxaphene	<1.0
12674-11-2	Aroclor-1016	<1.0
11104-28-2	Aroclor-1221	<1.0
11141-16-5	Aroclor-1232	<1.0
53469-21-9	Aroclor-1242	<1.0
12672-29-6	Aroclor-1248	<1.0
11097-69-1	Aroclor-1254	<1.0
11096-82-5	Aroclor-1260	<1.0

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/25/94

Sample ID: MW-4

Project No.: R001-01-100

Lab ID: 7719-4

Method: EPA-8150

CAS Number	Compound Analyzed	Concentration (µg/L)
94-75-7	2,4-D	<1
93-72-1	2,4,5-TP	<1
88-85-7	Dinoseb	<1
93-76-5	2,4,5-T	<2

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

CENTRE FOR ADVANCED TECHNOLOGY
2401 Research Boulevard, Suite 204
Fort Collins, Colorado 80526
(303) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 3/11/94
Received: 3/12/94
Analyzed: 3/22/94

Sample ID: MW-4

Project No.: R001-01-100

Lab ID: 7719-4

Compound Analyzed	Concentration (mg/L)	Method (Detection Limit)
Total Antimony	<0.006	EPA-7040 (0.006 mg/L)
Total Arsenic	0.023	EPA-7060 (0.005 mg/L)
Total Barium	<0.1	EPA-7080 (0.1 mg/L)
Total Beryllium	<0.004	EPA-7090 (0.004 mg/L)
Total Cadmium	<0.002	EPA-7130 (0.002 mg/L)
Total Chromium	<0.01	EPA-7190 (0.01 mg/L)
Total Copper	<0.01	EPA-7210 (0.01 mg/L)
Total Cobalt	0.013	EPA-7200 (0.01 mg/L)
Total Lead	<0.01	EPA-7420 (0.01 mg/L)
Total Tin	<0.05	EPA-7870 (0.05 mg/L)
Total Thallium	<0.002	EPA-7840 (0.002 mg/L)
Total Selenium	<0.005	EPA-7741 (0.005 mg/L)
Total Silver	<0.01	EPA-7760 (0.01 mg/L)
Total Mercury	<0.002	EPA-7470 (0.002 mg/L)
Total Nickel	0.04	EPA-7520 (0.01 mg/L)
Total Vanadium	<0.05	EPA-7910 (0.05 mg/L)
Total Zinc	0.21	EPA-7950 (0.01 mg/L)
Cyanide	<0.1	EPA-335.1 (0.1 mg/L)
Sulfide	<1	EPA-376.1 (1 mg/L)

COMMENT: All samples analyzed for total metals were concentrated by a factor of 10x.

TECHNOLOGY LABORATORY, INC.

TECHNOLOGY LABORATORY, INC.

Field Chain of Custody Record

Project Name: LOCKWOOD CORPORATION PART B PERMIT REAPP. Project No. R001-01-100

Shipped by: SORENSEN ENVIRONMENTAL

Results to the attention of: PAUL SORENSEN

Sampling Point	Location	Sample ID	Date	Sample Type	No. of Containers	Analysis Required
MW-7	NW OF WASTE POND	MW-7	3/11/94	WATER	7	Semi-Vol, Vol, METALS Pest, Herb, CN, S=
MW-6	WEST OF WASTE POND	MW-6	"	"	7	"
MW-3	SOUTH OF WASTE POND	MW-3	"	"	7	"
MW-4	NE OF WASTE POND	MW-4	"	"	7	"

Sampler(s) (signature) Paul C. Sorensen

Relinquished by: (signature)	Date / Time	Received by: (signature)	Relinquished by: (signature)	Date / Time	Received by: (signature)
Paul Sorensen	3/12/94 9:30 a.m.				
Relinquished by: (signature)	Date / Time	Received for Laboratory by: (signature)	Date / Time		
		Bri Potter	11/12/94 9:31		

Sealed for shipment by: (signature) _____ Date/Time _____ Shipment method: _____

Comments: _____

APPENDIX C

Closure Plan

CLOSURE PLAN
FOR
LOCKWOOD CORPORATION
WASTE ACID EVAPORATION POND
EPA I.D. NO. NED044101442

IN ACCORDANCE WITH:

U.S. ENVIRONMENTAL PROTECTION AGENCY

RESOURCE CONSERVATION AND RECOVERY ACT

HAZARDOUS WASTE MANAGEMENT RULES AND REGULATIONS

40 CFR PARTS 264 & 265, SUBPARTS G & H

AND

NEBRASKA DEPARTMENT OF ENVIRONMENTAL CONTROL

RULES AND REGULATIONS GOVERNING HAZARDOUS WASTE MANAGEMENT

RULES NO. 30 & 31

JULY 1985

REVISED

SEPTEMBER 1985

PREPARED BY:

HOSKINS-WESTERN-SONDEREGGER, INC.
825 J STREET
LINCOLN, NEBRASKA 68501

CLOSURE PLAN

TABLE OF CONTENTS

INTRODUCTION

Lockwood Corporation proposes to close the waste acid evaporation pit facility at the Lockwood Corporation plant in the fall of 1985. Lockwood will close the facility in accordance with 40 CFR 265.111 and in a manner that (a) minimizes the need for further maintenance, and (b) controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post closure escape of hazardous waste, hazardous waste constituents, leachate, or waste decomposition products to the ground or surface waters or to the atmosphere.

In general, the closure of the facility will be completed in the following manner:

1. Removal of liquid, if present.
2. Demolition of existing dikes and removal of influent waste line.
3. Placement of lime and soil layer.
4. Installation of impermeable synthetic liner.
5. Placing and compacting clay soil cover and gravel stabilizing layer.
6. Installing security fence.

Closure of the facility will be initiated after approval by the Nebraska Department of Environmental Control (NDEC) and after the required public notice period has ended. Financial assurance will be provided and will continue to be provided until closure is complete.

Also, Certification of closure will be provided as required by the regulation. If any wastes are to be removed from the site, such wastes will be disposed of at an approved hazardous waste disposal site.

Groundwater monitoring of the facility will continue during the post-closure care period for facility.

CLOSURE PLAN

A. GENERAL

1. Lockwood will keep a written Closure Plan at the Lockwood Corporation Plant, (site of Waste Acid Evaporation Pond,) until all closure operations are completed, after which the Plan will become part of the Plant's permanent records.
2. The Plant Engineer (or other facility employee as designated by Lockwood) will be responsible for: maintaining the Plan; revising and updating the Plan as necessary; and, implementing the Plan at the time of Facility closure.
3. Records of Closure Plan revisions and updates will be retained at Lockwood for the care period of Closure and Post Closure. However, this retention period is automatically extended during the course of any unresolved enforcement action regarding the facility or as requested by the EPA Region VII Administrator or the Director of the Nebraska Department of Environmental Control (DEC).
4. The Closure Plan and related records will be furnished upon request and made available at all reasonable times for inspection by any officer, employee, representative, or designee of either the EPA or the Nebraska DEC.
5. Any revisions to the approved Closure and Post Closure Plan will be submitted to and approved by the Director of the Nebraska DEC and EPA Region VII Administrator.

6. The Regional Administrator can be contacted by writing:

   United States Environmental Protection Agency

   Region VII

   324 East 11th Street,

   Kansas City, Missouri 64106

7. The Director of the Nebraska DEC can be contacted by writing:

   State of Nebraska

   Director, Department of Environmental Control

   301 Centennial Mall South

   Lincoln, Nebraska 68509

8. It is the intention of this Closure Plan to meet the "Closure Performance Standard" as stated in 40 CFR 265.111.

B. FACILITY CONDITIONS

1. General Facility Information:

   a. The Lockwood Corporation plant is located on the southeast corner of the City of Gering, Scottsbluff County, Nebraska in the SE¼ of Section 1, Township 21 North, Range 55 West of the 6th P.M. Based upon Flood Insurance Rate Maps available for Scottsbluff County through the Federal Emergency Management Agency, none of the waste acid evaporation pond lies in the 100-year flood plain.

   The plant property is presently surrounded by agricultural land on the south and east sides, and industrial property on the west side and industrial and State Highway 92 on the north side. Attachment I is a Location Map showing approximate plant and Facility locations with respect to contours, highways and roads, etc.

   b. The subject of this Closure Plan, the Waste Acid Evaporation Pond Facility, is located southwest of the Galvanizing Building from which the acid waste is generated. The Facility consists of two (2) cells with a common dike separating the cells. The bottom dimensions of the south (Cell #1) and the north (Cell #2) are approximately 100 ft x 90± ft and 100 ft x 100 ft, respectively. Interior and exterior dikes have side slopes of 3:1.

   Construction records indicate that the north cell was constructed with a mixed soil and bentonite liner on the bottom and to an elevation of 3 feet above the bottom on the sloped

interior surfaces of the dikes. It is assumed that the south cell was unlined since no records were available on this cell and test borings were unable to determine the presence of a liner.

The south cell was placed into service in November 1972 and received wastes until February of 1978 at which time the north cell was constructed and placed into operation. The north cell received wastes from this time until June, 1984, when the discharges to the cell were stopped, as requested by Administrative Order.

In general, the wastes discharged to the cells consisted of a 5% to 15% solution of waste sulfuric acid from the corporations galvanizing process located in the galvanizing building. Typically the facility received an average of two (2) "batch type" discharges per month. The volume of an average discharge ranged between 5,000 to 8,000 gallons. The calculated capacity of the north cell was approximately 375,600 gallons and the south cell capacity was approximately 308,500 at an average liquid depth of 4.0 ft.

Since that time, all other waste acid from the galvanizing process has been shipped to an Oklahoma hazardous waste disposal site.

c. The Waste Acid Evaporation Pond Site Layout Plan with respect to adjacent buildings and structure, and the site elevation and estimated soils profile are shown in Attachments IIa. and IIb. and IIc. respectively.

2. Waste Characterization:

a. Lockwood Corporation initiated and conducted an extensive waste monitoring, sampling, and analysis program aimed at identifying the waste constituent concentrations and locations.

b. The primary waste stream to the Facility was waste sulfuric acid generated by the galvanizing process. Besides having an extremely low pH (Less than 2.5), the waste has high concentrations of zinc, iron, and sulfates, with lesser concentrations of lead, cadmium, chromium, sodium, and chlorides. No other known wastes have been discharged to the Facility in any significant or detectable quantities. The waste stream is classified K062 as defined by 40 CFR 261.

c. Based upon waste sampling and analyses in and around the Facility, it has been determined that there are three general areas of waste concentration with varying degrees of contamination. These are described as follows:

1.) Facility Bottom Sludges. As previously mentioned, the Facility presently contains a 2.5 to 3.0-foot layer of dry sludge resulting from accumulated precipitate and sediment from the waste stream. Samples of the bottom sludges were obtained between June 30 and July 12, 1984. Each of the cells were divided into four equal quadrants. A minimum of five (5) locations in each quadrant were selected at random for sample collection. At each of the selected locations representative samples of each vertical foot of sludge from the top of the existing sludge to the bottom soil and sediment were collected.

In general, samples were obtained by hand excavating the top 1 to 2 feet of material where possible and then driving a modified "Shelby Tube" type core sampling device into the remaining depth of sludge. The tube was driven until the lower soil and sediments would seal or plug the end of the tube allowing for extraction from the hole.

In sample locations where sludges were extremely hard, the top 1 to 2 feet were hand excavated and then the remaining depth was sampled using a gas-driven power type continuous flight auger. All of the sample locations in the south cell (Cell No. 1) were very hard and dry and the auger method was used.

The samples collected were dark brown, yellow, white to blue-green in color. Moisture concentrations for the samples varied from very dry and hard in the south cell to damp and wet in the north cell. The samples from each of the locations in each quadrant were then composited and analyzed as shown in Attachment III of the Appendix of this closure plan document.

These results indicate that all the samples contain characteristic E.P. Toxicity Metals concentration levels well below those established for hazardous waste. However, due to current RCRA regulations, these wastes are classified as K062 hazardous wastes.

The Facility bottom sludge will be included in the "waste inventory" for this Closure Plan.

2.) Contaminated Site Soils. Soils beneath the Facility will be addressed by the "Post Closure Plan" and will not be included in the waste inventory of the Closure Plan.

3.) Groundwater. Groundwater in the area of the Facility also will be addressed by the "Sampling and Analysis" plan for groundwater as outlined in the Post Closure Plan and will not be included in the waste inventory of the Closure Plan.

C. SCHEDULE OF FINAL CLOSURE

1. The projected schedule for final closure of the Lockwood Waste Acid Evaporation Pond shall be in accordance with the following. The days stated for each item are the number of days after receiving approval of the closure plan from NDEC.

Item	Days After Date of Approval
a. Start of Closure Operations	30
b. Complete Closure	180
c. Certify Closure	210

2. The Facility Owner or his designated representative may amend the project closure schedule at any time during the active life of the facility. Any revisions to the closure plan will be submitted to and approved by the Director of the Nebraska D.E.C.

D. FACILITY INVENTORY

1. In accordance with the R.C.R.A. regulations for Closure Plans, the maximum amount of waste inventory on-site at the Facility shall consist of the Facility Bottom Sludge. In general, the Facility sludge and soils are described as follows:
   a. Sludge: Dark gray, white, or yellow or blue-green in color with some light brown (iron) areas and layers; crystalline structure when dry and very soft in consistency when moist to wet with no developed soil structure.
   b. Soils: Silty clay, possibly some sandy clay, dark brown in color when wet, stiff in consistency and wet, with a well developed soil structure.
2. Any water standing in the pit at the time of closure shall not be considered part of the waste inventory, and shall be pumped to disposal site containers for disposal at an approved hazardous waste site prior to the start of closure operations.
3. Based on the sludge samples collected, sludge depths averaged 2.8 feet deep in the south cell and 3.0 feet deep in the north cell.
4. In addition, it will be assumed that approximately 2.0 feet of soil on the Facility's sides and bottom and the total inner dike soil are contaminated sludge. Thus, the total calculated waste inventory volume shall be assumed to be a maximum of 5,100 cubic yards.

E. TREATMENT OF FACILITY INVENTORY

The following is a step-by-step description of the procedures and actions that will be taken in closing the Facility. A general contractor selected by Lockwood Corporation will perform the work described in this section.

1. Removal of standing water.

   If present in the Facility, standing water will be removed by pumping and discharging to the existing Neutralization Tank.

2. Demolish Existing Earth Dikes.

   Existing exterior and interior dikes will be demolished by pushing in the dikes over top of the existing sludge. The existing waste acid inlet pipe line will be removed to 10 feet outside of the exterior dike and plugged and abandoned.

3. Construction of Alkaline/Soil Layer

   A layer of lime followed by compacted clay soil will be placed over the top of the sludge and pushed-in-dike material to ensure alkaline (high pH) conditions are maintained above the existing sludge deposits and dike area. Hydrated lime will be spread at the rate of 200 lbs. per 1000 square feet over the top of the sludge in the both cells and and the interior dike (approximately 130 feet x 250 feet area). The lime layer will then be covered by a 6-inch to 1.0 foot thick compacted layer (approx.) of silty-clay (non-dispersive) soil. The surface of this layer will be uniformly sloped and smooth graded to the lines and grades shown in Attachment II of the Appendix.

4. Final Cover

a. Final Cover The area of the facility to be covered consists of the area bounded by the exterior dikes of the two cells. The dimensions of this area is approximately 130 feet wide (East-West) by 250 feet long (North-South).

b. Cover Characteristics

1) The final cover will be sloped and consist of the following materials to prevent surface water infiltration and pooling:

a) Impermeable synthetic top liner

b) Protective compacted clay soil cover layer over the synthetic liner

c) Gravel stabilizing final surface layer

2) Materials

a) Synthetic Liner. The synthetic liner will be a commercially available 20 mil thick (0.020 inch) polyvinyl chloride (PVC). The liner will be black in color and be fabricated in two (2), 70 feet x 260 feet (approx.) pieces. The liner material is resistant to degradation from the alkaline soils that will be used for the cover operation.

b) Cover (Fill) Soil.

(1) The soil to be used for the cover over the liner will be a silty-clay obtained from a local off-site borrow pit. The material will be a non-dispersive inorganic silty-clay material free of refuse, stones or clods larger that 3

inches maximum dimension, vegetation and other perishable material. Haul distance from the borrow pit to the Facility Site is approximately 5 miles.

(2) The acceptability of non-dispersive borrow material will be determined by using the standard "Crum Test" (Ref: USDA Soil Conservation Service, Soil Mechanics Note 8 and ASCE Journal of Geotechnical Engr., April, 1976. Compaction characteristics will be evaluated using ASTM §9American Society of Testing Materials) method D1557.

(3) The thickness of the cover material over the liner will range between 1.5 feet to 2.0 feet to protect the liner from ultraviolet light and physical damage from construction equipment or other possible sources. The surface will be sloped to the contour elevations as shown on the Plan and Cross-sections of Attachment II in the Appendix. Approximately 3,000 cubic yards of material will be required for the cover layer. The permeability of the compacted cover layer is estimated to range between 10^{-5} cm/sec. to 10^{-7} cm/sec.

c). Gravel. Gravel for the final stabilization layer on top of the soil cover will have a size range of one (1) to two (2) inches and will be obtained from locally available sources. A two (2) inch thickness will be applied over the total area of the cover.

c. Final Cover Design.

1) The design of the cover is shown in Attachment II of the Appendix to this Closure Plan.

2) Slope. The slope of the cover will be a minimum of 2% on the top area and four (4) foot horizontal to one (1) foot vertical around the perimeter of the exterior dikes.

3) Length of Run on Slope. The maximum length of run at the 2% slope will be approximately 70 feet.

d. Procedures for Placing and Installing Final Cover.

1) Synthetic (PVC) Liner Placement.

(a) Prior to placing the synthetic liner, the top of the lower alkaline-soil layer will be graded smooth to the 2% slope shown and inspected to be free of roots, stones, rocks and other sharp or angular objects.

(b) The two pieces of synthetic liner will be placed in the longitudinal, north-south direction. The seam at the north-south centerline of the two cells will be overlapped approximately 5 feet to prevent entry of seepage water. The perimeter edges of the liner will be anchored (keyed) into the existing exterior earthen dikes as shown on the cross-sections in

Attachment II. Temporary soil ballast will be placed at selected locations to prevent displacement by wind until placement of final cover, if required.

2) Protective Soil Cover.

(a) Upon completing installation of the liner, the protective soil cover layer will be installed. Silty-clay borrow material will be carefully placed by earth moving equipment to a minimum 8 to 12 inch thicknesses before any compaction efforts are performed.

(b) Compaction of the soil will be accomplished in 8 to 12 inch layers by compaction rollers and earth spreading equipment. The soils will be wetted or dried by aeration, if required, and compacted to the specified limits stated herein.

(c) Cover shall be placed to a 1'-4" thickness over the liner and to the surface contour elevations and slopes shown on Attachment II. The final surface shall be graded smooth to prevent ponding.

(d) Soil Testing. Soil tests will be performed on each lift of soil cover material placed to ensure the degree of compaction as stated herein after is met.

3) Gravel Stabilization Layer. A final 2 inch thick (minimum) layer of gravel will be uniformly placed over the top of the soil cover and exterior surface of the dikes to the limits shown in Attachment II. Additionally, periodic

inspection of the facility will be conducted during the closure period and if any deterioration of cover occurs, it will be repaired using similar materials.

5. Soil Compaction and Testing

a. Degree of Compaction.

1) All fill and soil cover will be compacted to meet the following limits:

Material	Moisture Content	Minimum Degree of Compaction
Silty Clay	Near Optimum	82% of Maximum Dry Density

2) These materials will be moistened or dried, if necessary, and compacted so that each layer meets the moisture content and degree of compaction stated above.

b. Soil Testing

1) Soil tests for moisture and degree of compaction will be performed by qualified soils testing personnel on each 8-inch lift of soil placed and compacted.

2) A minimum of two (2) soil compaction tests will be performed for each 6-inch compacted lift. Soil tests will be performed in accordance with approved test methods.

3) Compacted fill and soil cover that does not meet the requirements will be reworked or removed and properly replaced.

6. The type and minimum number of pieces of equipment expected to perform closure operations shall be as follows:

   a. 1 - Front End Loader - Rubber Tired Type

   b. 1 - Compactor - Roller Type

   c. 1 - Motor Grader

   d. 8 - Dump Trucks for Borrow Soil Hauling

7. The schedule for the above mentioned closure operations shall be as outlined in Section C of this Plan.

F. FACILITY DECONTAMINATION

Due to the nature of this Closure operation and the relatively low hazard of the wastes involved, limited decontamination of the equipment used for closure will be as follows:

1. Equipment.

    a. Equipment used to excavate, move, and compact waste inventory will be physically scraped and brushed clean of waste materials at the Facility site each time prior to leaving the areas. This will be done without the use of water. These materials will be disposed of with the other inventory.

G. CLOSURE CERTIFICATION

1. When closure is completed, Lockwood and an independent registered professional engineer will provide certification as prescribed by 40 CFR 265.115.
2. See the Appendix and Attachment for a copy of the form for "Certification of Final Closure".

H. FACILITY FENCING

1. Existing Fence.

   a. Galvanized steel chain link perimeter fencing exists along the Lockwood Plant property boundaries. The Facility is bounded on the west and south sides by this fence (See Attachment II).

   b. The existing chain link fence is an 8 foot high industrial security fence with galvanized wire fabric and posts.

   c. The existing fencing is in good condition and will be inspected when post closure begins to ensure that it is in good condition.

2. New Fencing.

   a. New perimeter chain link fencing will be installed along the north and east sides to enclose the Facility. Fencing will be installed at the location shown on Attachment II in the Appendix.

   b. The chain link fencing will be the same as the existing perimeter chain link fencing. An access gate will be installed to allow entrance to the Facility for maintenance and post closure activities. Locks will be installed on the access gate opening.

3. Signs. The perimeter property fencing is currently signed. Additional signs as required by the regulatory agency will be installed on the facility perimeter fence at the start of the post closure period.

I. COST ESTIMATE FOR FACILITY CLOSURE

1. An estimate of the cost of closing the Lockwood Corporation Waste Acid Evaporation Pond in accordance with the procedures described herein, is shown in Table 3 to follow.
2. The Facility Owner or his designee will prepare a new closure cost estimate whenever a change in the Closure Plan affects the cost of closure. Such changes will be recorded in Table 3.

TABLE NO. 3

OPINION OF PROBABLE CLOSURE COSTS

LOCKWOOD WASTE ACID EVAPORATION PIT

Item	Quantity	Unit	Unit Cost	Estimated* Amount
Excavation of Dikes	400	CY	$3.00	$ 1,200
Lime	3.3	TN	$200	660
Synthetic Liner	32,500	SF	$0.30	9,750
Clay Soil Cover and Fill, Including Borrow	3000	CY	$4.00	12,000
Gravel	300	TON	$7.00	2,100
Soil Testing	--	Lump Sum	$1,500	1,500
Fencing	455	LF	$10.00	4,550
Engineering & Inspection	--	Lump Sum	$2,500	2,500
Miscellaneous	--	Lump Sum	$1,000	1,000
Waste Sampling & Analysis	--	Lump Sum	$500	500
Contingency	--	Lump Sum	$3500	3500
TOTAL: OPINION OF PROBABLE CLOSURE COSTS				$39,260*

* NOTE: Costs Include Contract Labor and Equipment.

The above opinion of closure costs do not include the costs for Groundwater Monitoring. These costs will be covered in the Post Closure Plan, groundwater monitoring plan.

J. FINANCIAL ASSURANCE

1. Lockwood will establish financial assurance for closure of the Lockwood Waste Acid Evaporation Pond by one of the methods as described in 40 CFR 265, subpart H.

APPENDIX

CLOSURE PLAN

ATTACHMENTS

I. WASTE ACID EVAPORATION POND LOCATION MAP

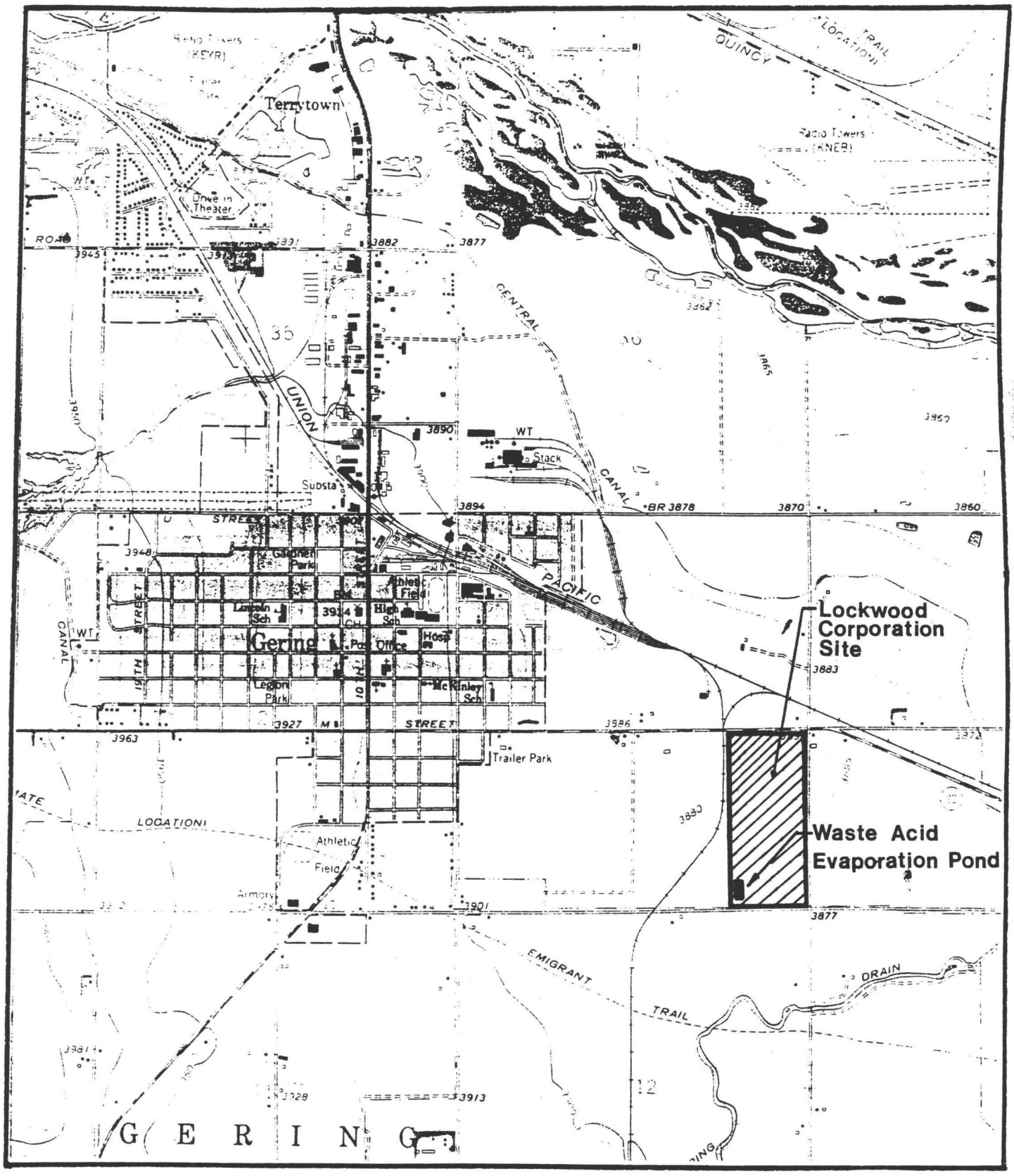
IIa. PLAN - WASTE ACID EVAPORATION POND

IIb. WASTE ACID EVAPORATION POND CROSS-SECTION

IIc. GEOLOGIC CROSS-SECTION

III. FINANCIAL ASSURANCE DOCUMENTS

IV. CERTIFICATION OF FINAL CLOSURE



N

SCALE: 1" = 2000'

LOCKWOOD CORPORATION

WASTE ACID EVAPORATION POND LOCATION MAP

ATTACHMENT I

ATTACHMENT III

FINANCIAL ASSURANCE DOCUMENTS

(To Be Included Upon Availability)

CERTIFICATION OF FINAL CLOSURE

OWNER'S CERTIFICATION

I, _____, of
(Owner's Name)

_____
(Name and Address of Hazardous Waste Facility)

hereby state and certify that, to the best of my knowledge and belief, the above-named hazardous waste facility has been closed in accordance with the attached approved Closure Plan, and that the closure was completed on the ____ day of _____, 19___.

_____ _____
Signature Date

ENGINEER'S CERTIFICATION

I, _____, a
(Engineer's Name)
certified professional engineer, hereby certify, to the best of my knowledge and belief, that I have verified all prior closure activities at _____ and
(Hazardous Waste Facility)
that I have made visual inspections of the aforementioned facility, and closure of the aforementioned Facility has been performed in accordance with the Closure Plan for the Facility approved by the Director of the Nebraska Department of Environmental Control.

_____ _____
Signature Date

Licensed Professional Engineer No. _____ In the State of _____

_____
Business Address City State Zip Phone No.

ATTACHMENT IV

APPENDIX G

A F F I D A V I T

STATE OF NEBRASKA)
) ss.
COUNTY OF SCOTTS BLUFF)

C. H. McCall, being first duly sworn, deposes and states as follows:

1. That he is the President of Lockwood Corporation, a Delaware corporation, whose address is Highway 92 East, Post Office Box 160, Gering, Nebraska 69341.

2. In accordance with that certain Lease and Agreement dated September 1, 1968, and pursuant to City of Gering, Nebraska, Industrial Development Revenue Bonds - Series A (Lockwood Corporation Project), Lockwood Corporation leases and occupies the following-described real estate:

> A part of the Southeast Quarter (SE¼) of Section One (1), Township Twenty-one (21) North, Range Fifty-five (55) West of the 6th P.M., Scotts Bluff County, Nebraska, more particularly described as follows: Beginning at a point 50 feet South of the Northeast corner of said SE¼ and on the East line of said SE¼; thence South on the East line of said SE¼ a distance of 1395.05 feet; thence West and parallel with the North line of said SE¼ a distance of 1253.12 feet to the East right-of-way line of the Union Pacific Railroad spur track; thence angle right 90°13' along said right-of-way line a distance of 1395.05 feet to the South right-of-way line of Nebraska State Highway No. 92; thence angle right 89°47' a distance of 1167.01 feet; thence angle right 16°12' a distance of 82.46 feet; thence angle left 106°16' a distance of 23 feet; thence angle right 90°04' a distance of 33 feet to the point of beginning containing 40.0 acres together with improvements and appurtenances thereon and thereunto belonging.

3. There is located on such real estate a waste acid evaporation pond to which the United States Environmental Protection Agency has assigned identification number NED044101442, such pond being located in the southwest corner of such real estate.

4. Lockwood Corporation has complied with all laws, rules and regulations applicable to such pond for the closure thereof and for postclosure care.

FURTHER AFFIANT SAITH NOT.

C. H. McCall

SUBSCRIBED AND SWORN TO before me this 1st day of August, 1988.

GENERAL NOTARY-State of Nebraska
MARVIN D. ZEILER
My Comm. Exp. June 23, 1991

Notary Public

My commission expires:

$10.50
Lockwood Corp.

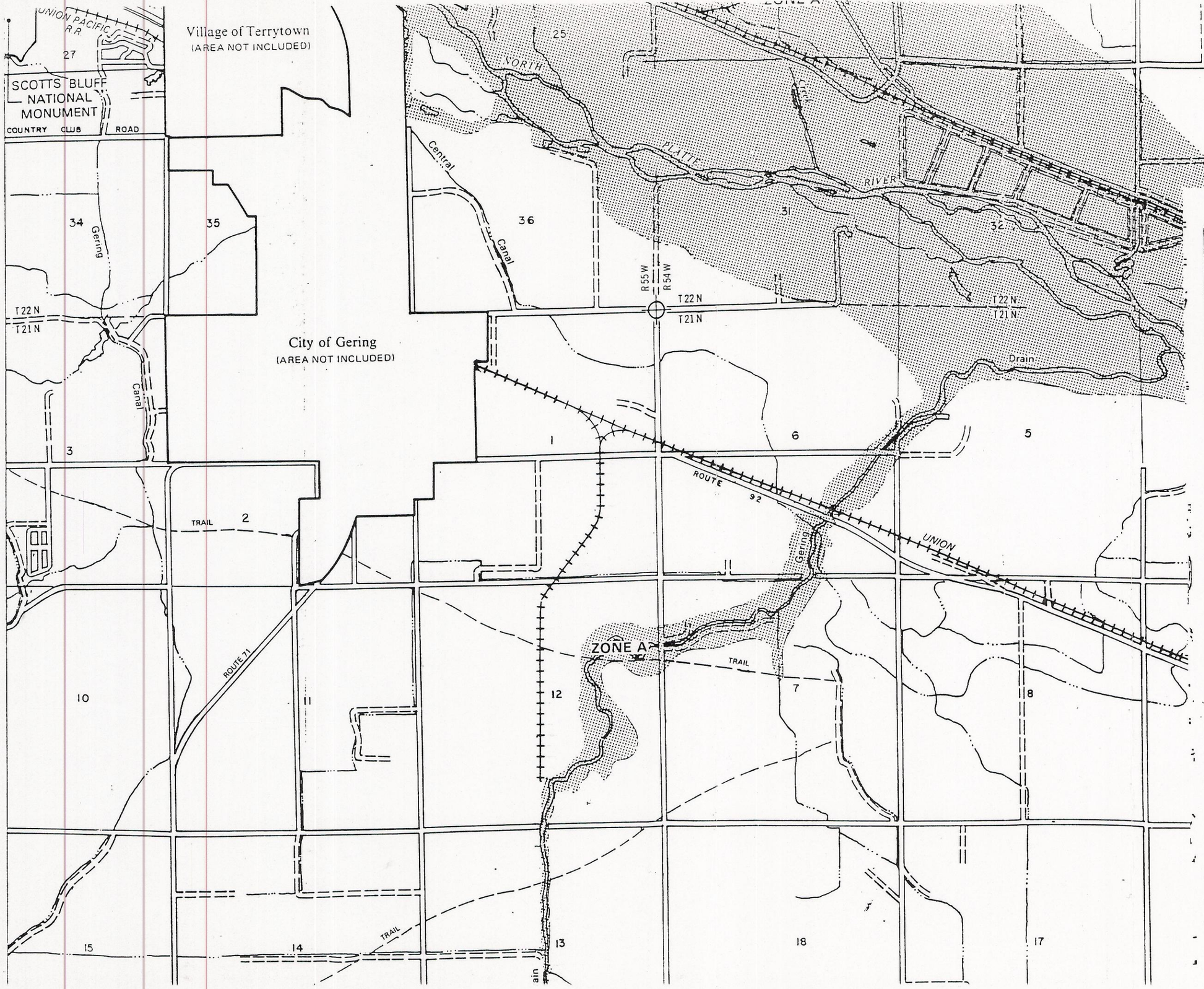
State of Nebraska, Scotts Bluff County ss.
Entered in Numerical Index and filed for record the 9 day of August, 1988 at 1:35 o'clock P M., and recorded in Book 121 of Miscellaneous on page 680
Mary Jo Ellis
Register of Deeds
By Pauline C. Hays Deputy

APPENDIX D

Post-Closure Plan

APPENDIX E

Flood Hazard Boundary Map



FLOOD HAZARD BOUNDARY MAP

SCOTTS BLUFF COUNTY, NEBRASKA

UNINCORPORATED AREA

PAGE 7 OF 10

(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE DATE:
FEBRUARY 7, 1978

A PART OF
COMMUNITY - PANEL NO.
310473 0007 A

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

APPENDIX F

Financial Assurance

POST-CLOSURE FINANCIAL ASSURANCE

ANNUAL COST ESTIMATE

Post-closure cost estimates herein provided assume that sampling will be required only for an additional 3 years. Year 9 of the 30 year closure care period is 1994; sampling will be conducted until 1996, or year 11. Post-closure care will be limited to site inspections and maintenance for years 12 through 30 (19 year period).

LOCKWOOD
POST-CLOSURE COST ESTIMATES
NECESSARY TO MEET
FINANCIAL ASSURANCE REQUIREMENTS OF
40 CFR 264.144, 145 (Current Year 9 - 1994)

Item	Cost	Total
Groundwater Monitoring:		
Sampling:		
Labor	$2,000	
Materials	140	
Trip Charge	50	
Equipment	65	
Miscellaneous	15	
SUBTOTAL	2,270 x 2 (semi-annual)	$4,540
Analytical:		
TOC (5 wells x $45 x 4 replicates)	720	
TOX (5 wells x $80 x 4 replicates)	1280	
Chloride (5 wells x $20 x 1)	100	
Iron (5 wells x $20 x 1)	100	
Manganese (5 wells x $20 x 1)	100	
Sodium (5 wells x $20 x 1)	100	
Sulfate (5 wells x $20 x 1)	100	
SUBTOTAL	2,500 x 2 (semi-annual)	$5,000
Inspection:		$600
Annual Costs	(Yrs 9 - 11)	$10,140
TOTAL: Yrs 9 - 11		$30,420
Long-term inspection	(Yrs 12 - 30) (19 yrs: inspection)	
TOTAL: Yrs 12 - 30	600 X 19	$11,400
TOTAL: Yrs 9 through 30 (1994 - 2015)		$41,820

APPENDIX G

Trust Agreement

TRUST AGREEMENT

THIS TRUST AGREEMENT (the "Agreement"), entered into as of this 8th day of August, 1988, by and between Lockwood Corporation, a Delaware corporation (the "GRANTOR"), and Scottsbluff National Bank and Trust Company, a national banking association (the "TRUSTEE").

W I T N E S S E T H:

WHEREAS, the United States Environmental Protection Agency, an agency of the United States Government ("EPA"), has established certain regulations applicable to the GRANTOR, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds will be available when needed for closure and/or postclosure care of the facility.

WHEREAS, the GRANTOR has elected to establish a trust to provide all or part of such financial assurance for the facilities identified herein.

WHEREAS, the GRANTOR, acting through its duly authorized officers, has selected the TRUSTEE to be the trustee under this Agreement, and the TRUSTEE is willing to act as trustee.

NOW, THEREFORE, the GRANTOR and the TRUSTEE agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "GRANTOR" means the owner or operator who enters into this Agreement and any successors or assigns of the GRANTOR.

(b) The term "trustee" means the TRUSTEE who enters into this Agreement and any successor trustee.

Section 2. Identification of Facilities and Cost Estimates.
This Agreement pertains to the facilities and cost estimates identified on Schedule A attached hereto.

Section 3. Establishment of Fund.
The GRANTOR and the TRUSTEE hereby establish a trust fund, the "Fund," for the benefit of EPA. The GRANTOR and the TRUSTEE intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the TRUSTEE, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the TRUSTEE is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the TRUSTEE pursuant to this Agreement. The Fund shall be held by the TRUSTEE, IN TRUST, as hereinafter provided. The TRUSTEE shall not be responsible nor shall it undertake any responsibility for

the amount or adequacy of, nor any duty to collect from the GRANTOR, any payments necessary to discharge any liabilities of the GRANTOR established by EPA.

Section 4. Payment for Postclosure Care.

The TRUSTEE shall make payments from the Fund as the EPA Regional Administrator shall direct, in writing, to provide for the payment of the costs of postclosure care of the facilities covered by this Agreement. The TRUSTEE shall reimburse the GRANTOR or other persons as specified by the EPA Regional Administrator from the Fund for postclosure expenditures in such amounts as the EPA Regional Administrator shall direct in writing. In addition. The TRUSTEE shall refund to the GRANTOR such amounts as the EPA Regional Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund.

Payments made to the TRUSTEE for the Fund shall consist of cash or securities acceptable to the TRUSTEE.

Section 6. TRUSTEE Management.

The TRUSTEE shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines which the GRANTOR may communicate in writing to the TRUSTEE from time to time subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling and managing the Fund, the TRUSTEE shall discharge its duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) Securities or other obligations of the GRANTOR, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2 (a), shall not be acquired or held unless they are securities or other obligations of the federal or state government;

(b) The TRUSTEE is authorized to invest the Fund in time or demand deposits of the TRUSTEE to the extent insured by an agency of the federal or state government; and

(c) The TRUSTEE is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment.

The TRUSTEE is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any

common, commingled or collective trust fund created by the TRUSTEE in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1904, 15 U.S.C. 80a-1, et seq., including advice is rendered or the shares of which are sold by the TRUSTEE. The TRUSTEE may vote such shares in its discretion.

Section 8. Express Power of Trustee.

Without in any way limiting the powers and discretions conferred upon the TRUSTEE by the other provisions of this Agreement or by law, the TRUSTEE is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer or otherwise dispose of any property held by it, by public or private sale. No person dealing with the TRUSTEE shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the TRUSTEE in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the TRUSTEE shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the TRUSTEE, in its separate corporate capacity, or in any other banking institution affiliated with the TRUSTEE, to the extent insured by an agency of the federal or state government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses.

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expense incurred by the TRUSTEE in connection with the administration of this trust, including fees for legal services rendered to the TRUSTEE, the compensation of the TRUSTEE to the extent not paid directly by the GRANTOR, and all other proper charges and disbursements of the TRUSTEE shall be paid from the Fund.

Section 10. Annual Valuation.

The TRUSTEE shall annually, at least thirty (30) days prior to the anniversary date of establishment of the Fund, furnish to the GRANTOR and to the appropriate EPA Regional Administrator a statement confirming the value of the trust. Any securities in the Fund shall be valued at market value as of no more than sixty (60) days prior to the anniversary date of establishment of the Fund. The failure of the GRANTOR to object in writing to the TRUSTEE within ninety (90) days after the statement has been furnished to the GRANTOR and the EPA Regional Administrator shall constitute a conclusively binding assent by the GRANTOR, barring the GRANTOR from asserting any claim or liability against the TRUSTEE with respect to matters disclosed in the statement.

Section 11. Advice of Counsel.

The TRUSTEE may from time to time consult with counsel, who may be counsel to the GRANTOR, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The TRUSTEE shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. TRUSTEE Compensation.

The TRUSTEE shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the GRANTOR.

Section 13. Successor Trustee.

The TRUSTEE may resign or the GRANTOR may replace the TRUSTEE, but such resignation or replacement shall not be effective until the GRANTOR has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same power and duties as those conferred upon the TRUSTEE hereunder. Upon the successor trustee's acceptance of the appointment, the TRUSTEE shall assign, transfer and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the GRANTOR cannot or does not act in the event of the resignation of the TRUSTEE, the TRUSTEE may apply to a court of competent jurisdiction of the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the GRANTOR, the EPA Regional Administrator and the present TRUSTEE by certified mail ten (10) days before such change becomes effective. Any expenses incurred by the TRUSTEE as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the TRUSTEE.

All orders, requests and instructions by the GRANTOR to the TRUSTEE shall be in writing signed by such persons as are designated in Exhibit A attached hereto or such other designees as the GRANTOR may designate by amendment to Exhibit A. The TRUSTEE shall be fully protected in acting without inquiry in accordance with the GRANTOR's orders, requests and instructions. All orders, requests and instructions by the EPA Regional Administrator to the TRUSTEE shall be in writing, signed by the EPA Regional Administrators of the Regions in which the facilities are located, or their designees, and the TRUSTEE shall act and shall be fully protected in acting in accordance with such orders, requests and instructions. The TRUSTEE shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the GRANTOR or EPA hereunder has occurred. The TRUSTEE shall have no duty to act in the absence of such orders, requests and instructions from the GRANTOR and/or EPA except as provided for herein.

Section 15. Notice of Nonpayment.

The TRUSTEE shall notify GRANTOR and the appropriate EPA Regional Administrator, by certified mail within ten (10) days following the expiration of the thirty (30) day period after the anniversary of the establishment of the trust, if no payment is received from the GRANTOR during that period. After the pay-in period is completed, the TRUSTEE shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement.

This Agreement may be amended by an instrument in writing executed by the GRANTOR, the TRUSTEE and the appropriate EPA Regional Administrator, or by the TRUSTEE and the appropriate EPA Regional Administrator if the GRANTOR ceases to exist.

Section 17. Irrevocability and Termination.

Subject to the right of the parties to amend this Agreement as provided in Section 16, this trust shall be irrevocable and shall continue until terminated at the written agreement of the GRANTOR, the TRUSTEE and the EPA Regional Administrator, or by the TRUSTEE and the EPA Regional Administrator if the GRANTOR ceases to exist. Upon termination of the trust, all remaining trust property, less final trust administration expenses, shall be delivered to the GRANTOR.

Section 18. Immunity and Indemnification.

The TRUSTEE shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this trust, or in carrying out any directors by the GRANTOR or the EPA Regional Administrator issued in accordance with this Agreement. The TRUSTEE shall be indemnified and saved harmless by the GRANTOR or from the trust Fund, or both, from and against any personal liability to which the TRUSTEE may be subjected by reason of any act or conduct in its official capacity including all expenses reasonably incurred in its defense in the event the GRANTOR fails to provide such defense.

Section 19. Choice of Law.
This Agreement shall be administered, construed and enforced according to the laws of the State of Nebraska.

Section 20. Interpretation.
As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 264.151 (a) (1) as such regulations were constituted on the date first above written.

LOCKWOOD CORPORATION, A Delaware Corporation, GRANTOR

SCOTTSBLUFF NATIONAL BANK AND TRUST COMPANY, A National Banking Assoc., TRUSTEE

By_____ President

By_____ President

STATE OF NEBRASKA)
) ss.
COUNTY OF SCOTTS BLUFF)

On this 8th day of August, 1988, before me personally me duly sworn did depose and say that he resides in Gering, Nebraska, that he is above instrument; that he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he signed his name thereto by like order.

_____ Notary Public

My commission expires:

STATE OF NEBRASKA)
) ss.
COUNTY OF SCOTTS BLUFF)

On this 9th day of August, 1988, before me personally came John T. Selzer, President of Scottsbluff National Bank and Trust Company, to me known, who, being by me duly sworn did

depose and say that he resides in Scottsbluff, Nebraska, that he is President of Scottsbluff National Bank and Trust Company, the corporation in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he signed his name thereto by like order.

_____

Notary Public

My commission expires:

SCHEDULE A

EPA IDENTIFICATION NO.: NED0441011442

NAME: Lockwood Corporation Waste Acid Evaporation Pond

ADDRESS: Highway 92 East
Post Office Box 160
Gering, Nebraska 63941

POSTCLOSURE COST ESTIMATES: $41,800.00

SCHEDULE B

$20,900.00 to be deposited on the date of the Trust Agreement

$20,900.00 to be deposited November 1, 1988

EXHIBIT A

Lockwood Corporation as GRANTOR in the foregoing Trust Agreement designates C.H. McCall as the person to sign all written orders, requests and instructions by the GRANTOR to the TRUSTEE pursuant to the Trust Agreement.

APPENDIX H

Part A Permit Application

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

For EPA Regional Use Only

Date Received
Month Day Year

EPA
United States Environmental Protection Agency
Washington, DC 20460

Hazardous Waste Permit Application Part A

(Read the Instructions before starting)

I. Installation's EPA ID Number *(Mark 'X' in the appropriate box)*

[ ] A. First Part A Submission

[X] B. Part A Amendment #_____

C. Installation's EPA ID Number: NED044101442

D. Secondary ID Number *(If applicable)*:

II. Name of Facility

LOCKWOOD CORPORATION

III. Facility Location *(Physical address not P.O. Box or Route Number)*

A. Street: HIGHWAY 92 EAST

Street *(Continued)*:

City or Town: GERING

State: NE

Zip Code: 69341-

County Code *(If known)*: 157

County Name: SCOTTS BLUFF

B. Land Type (Enter code): P

C. Geographic Location
LATITUDE (Degrees, Minutes, & Seconds): 41 48 055
LONGITUDE (Degrees, Minutes, & Seconds): 103 38 023

D. Facility Existence Date
Month: 11 Day: Year: 1972

IV. Facility Mailing Address

Street or P.O. Box: PO BOX 160

City or Town: GERING

State: NE

Zip Code: 69341-

V. Facility Contact *(Person to be contacted regarding waste activities at facility)*

Name *(Last)*: JACOBSON

(First): ROBERT

Job Title: TECH SERV DIR

Phone Number *(Area Code and Number)*: 308-436-5051

VI. Facility Contact Address *(See instructions)*

A. Contact Address
Location [X] Mailing [ ] Other [ ]

B. Street or P.O. Box:

City or Town:

State:

Zip Code: -

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number *(Enter from page 1)*: NED041014142

Secondary ID Number *(Enter from page 1)*:

VII. Operator Information *(See instructions)*

Name of Operator: LOCKWOOD CORPORATION

Street or P.O. Box: PO BOX 160

City or Town: GERING

State: NE

ZIP Code: 69341-

Phone Number *(Area Code and Number)*: 308-436-5051

B. Operator Type: P

C. Change of Operator Indicator: Yes [ ] No [X]

Date Changed Month / Day / Year:

VIII. Facility Owner *(See Instructions)*

A. Name of Facility's Legal Owner: LOCKWOOD CORPORATION

Street or P.O. Box: PO BOX 160

City or Town: GERING

State: NE

ZIP Code: 69341-

Phone Number *(Area Code and Number)*: 308-436-5051

B. Owner Type: P

C. Change of Owner Indicator: Yes [ ] No [X]

Date Changed Month / Day / Year:

IX. SIC Codes *(4-digit, in order of significance)*

Primary		Secondary	
3523	(Description) Farm Machinery & Equipment	3525	(Description) Center Pivot Irrigation
Secondary		**Secondary**	
3713	(Description) Truck Bodies		(Description)

X. Other Environmental Permits *(See Instructions)*

A. Permit Type *(Enter code)*	B. Permit Number	C. Description
N		NPDES Stormwater (Applied)
N	NE0114511	POTW

EPA I.D. Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N E D 0 4 4 1 0 1 4 4 2	

XI. Nature of Business *(Provide a brief description)*

Corporate offices and manufacturing facility for manufacture of farm machinery including pivot irrigation equipment. Also manufacture truck bodies including hoists, cylinders, and pumps. Facility also includes a hot dip galvanizing plant for irrigation and subcontract galvanizings and a painting operation forthe above equipment.

XII. Process Codes and Design Capacities

A. PROCESS CODE - *Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in item XIII.*

B. PROCESS DESIGN CAPACITY - *For each code entered in column A, enter the capacity of the process.*

1. **AMOUNT** - *Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.*
2. **UNIT OF MEASURE** - *For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.*

C. PROCESS TOTAL NUMBER OF UNITS - *Enter the total number of units used with the corresponding process code.*

PROCESS CODE	PROCESS	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
	Disposal:	
D79	Underground Injection	Gallons; Liters; Gallons Per Day; or Liters Per Day
D80	Landfill	Acre-feet or Hectare-meter
D81	Land Treatment	Acres or Hectares
D82	Ocean Disposal	Gallons Per Day r Liters Per Day
D83	Surface Impoundment	Gallons or Liters
D99	Other Disposal	Any Unit of Measure Listed Below
	Storage:	
S01	Container (Barrel, Drum, Etc.)	Gallons or Liters
S02	Tank	Gallons or Liters
S03	Waste Pile	Cubic Yards or Cubic Meters
S04	Surface Impoundment	Gallons or Liters
S05	Drip Pad	Gallons or Liters
S06	Containment Building-Storage	Cubic Yards or Cubic Meters
S99	Other Storage	Any Unit of Measure Listed Below
	Treatment:	
T01	Tank	Gallons Per Day or Liters Per Day
T02	Surface Impoundment	Gallons Per Day or Liters Per Day
T03	Incinerator	Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; or Btu's Per Hour
T04	Other Treatment	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T80	Boiler	Gallons or Liters
T81	Cement Kiln	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T82	Lime Kiln	
T83	Aggregate Kiln	
T84	Phosphate Kiln	
T85	Coke Oven	
T86	Blast Furnace	
T87	Smelting, Melting, Or Refining Furnace	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
T88	Titanium Dioxide Chloride Process Oxidation Reactor	
T89	Methane Reforming Furnace	
T90	Pulping Liquor Recovery Furnace	
T91	Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid	
T92	Halogen Acid Furnaces	
T93	Other Industrial Furnaces Listed in 40 CFR §260.10	
T94	Containment Building-Treatment	Cubic Yards or Cubic Meters
	Miscellaneous (Subpart X):	
X01	Open Burning/Open Detonation	Any Unit of Measure Listed Below
X02	Mechanical Processing	Short Tons Per Hour; Metric Tons Per Hour; Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; or Kilograms Per Hour
X03	Thermal Unit	Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; or Btu's Per Hour
X04	Geologic Repository	Cubic Yards or Cubic Meters
X99	Other Subpart X	Any Unit of Measure Listed Below

UNIT OF MEASURE	UNIT OF MEASURE CODE
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's Per Hour	I

EPA I.D. Number *(Enter from page 1)*: N E D 0 4 4 1 0 1 4 4 2

Secondary ID Number *(Enter from page 1)*:

XII. Process Codes and Design Capabilities *(Continued)*

EXAMPLE FOR COMPLETING ITEM XII (Shown in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.

Line Number X	Line Number 1	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	For Official Use Only
X	1	S 0 2	5 3 3 . 7 8 8	G	0 0 1	
	1	D 8 3	430,000.	G	0 0 1	
	2		.			
	3		.			
	4		.			
	5		.			
	6		.			
	7		.			
	8		.			
	9		.			
1	0		.			
1	1		.			
1	2		.			
1	3		.			

NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in item XIII.

XIII. Other Processes *(Follow instructions from item XII for D99, S99, T04 and X99 process codes)*

Line Number X	Line Number 1	A. Process Code (From list above)	B. PROCESS DESIGN CAPACITY 1. Amount (Specify)	B. 2. Unit Of Measure (Enter code)	C. Process Total Number Of Units	D. Description Of Process
X	1	T 0 4	.			In-situ Vitrification
	1		.			
	2		.			
	3		.			
	4		.			

EPA I.D. Number *(Enter from page 1)*

N	E	D	0	4	4	1	0	1	4	4	2

Secondary ID Number *(Enter from page 1)*

XIV. Description of Hazardous Wastes

A. EPA HAZARDOUS WASTE NUMBER - *Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR, Part 261 Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.*

B. ESTIMATED ANNUAL QUANTITY - *For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.*

C UNIT OF MEASURE - *For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:*

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in item XII A. on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.

NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:

1. *Enter the first two as described above.*
2. *Enter "000" in the extreme right box of item XIV-D(1).*
3. *Enter in the space provided on page 7, item XIV-E, the line number and the additional code(s).*

2. PROCESS DESCRIPTION: *If a code is not listed for a process that will be used, describe the process in the space provided on the form (D.(2)).*

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. *Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.*
2. *In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.*
3. *Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.*

EXAMPLE FOR COMPLETING ITEM XIV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

Line Number	A. EPA HAZARD WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESS (1) PROCESS CODES (Enter code)	D. PROCESS (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
X 1	K 0 5 4	900	p	T 0 3 D 8 0	
X 2	D 0 0 2	400	P	T 0 3 D 8 0	
X 3	D 0 0 1	100	P	T 0 3 D 8 0	
X 4	D 0 0 2				Included With Above

Please print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved, OMB No. 2050-0034 Expires 9-30-96
GSA No. 0248-EPA-OT

EPA I.D. Number *(Enter from page 1)*: N E D 0 4 4 1 0 1 4 4 2

Secondary ID Number *(Enter from page 1)*:

XIV. Description of Hazardous Wastes *(Continued)*

Line Number	A. EPA HAZARDOUS WASTE NO. (Enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (Enter code)	D. PROCESSES (1) PROCESS CODES (Enter code)	D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D 0 0 2	Discontinued 1984		D 8 3	Spent pickle liquor sludge (since 1984, hazardous waste have been shiped to off-site disposal facilities).
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					

EPA I.D. Number *(Enter from page 1)*	Secondary ID Number *(Enter from page 1)*
N E D 0 4 4 1 0 1 4 4 2	

XV. Map

Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.

XVI. Facility Drawing

All existing facilities must include a scale drawing of the facility (see instructions for more detail).

XVII. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

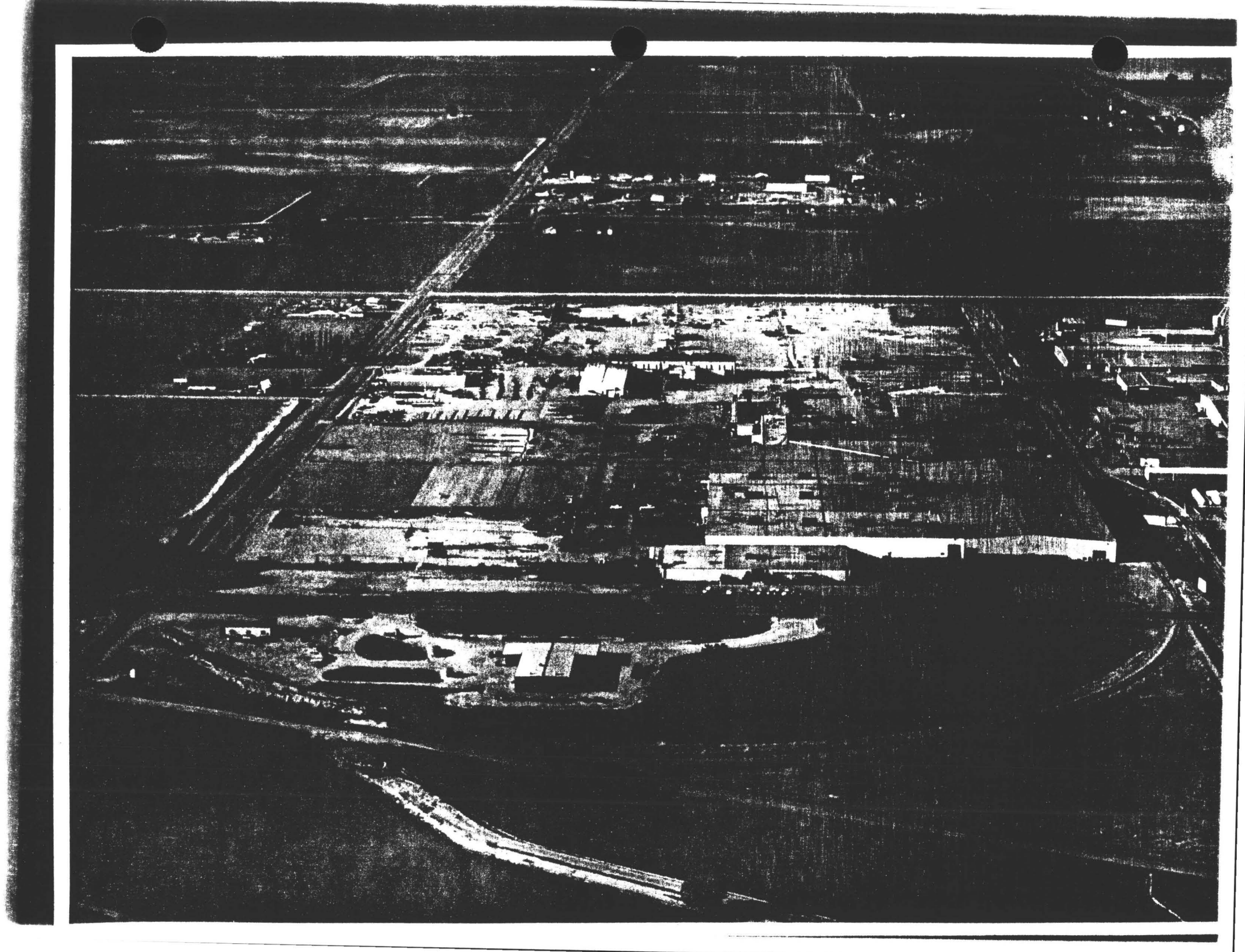
XVIII. Certification(s)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature	Date Signed
Name and Official Title (Type or print)	
Owner Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	
Operator Signature	Date Signed
Name and Official Title (Type or print)	

XIX. Comments

Note: Mail completed form to the appropriate EPA Regional or State Office. (Refer to instructions for more information)



APPENDIX I

Phase I Soil Sampling Report - Solid Waste Management Unit

HWS Technologies Inc.

LINCOLN OFFICE
825 J Street, Box 80358
Lincoln, NE 68501
402/479-2200
FAX 402/479-2276

Solutions Through Service Since 1944

June 4, 1992

Mr. Lyndell L. Harrington, P.E.
Chief, Permits Section
RCRA Branch/Waste Management Division
U.S. EPA Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

RE: RFI Workplan Implementation - Phase I Soil Sampling
Results for Lockwood Corporation,, Gering,
Nebraska, NED 044101442

Dear Mr. Harrington:

Enclosed is a data summary and report as a result of Soil Sampling which was implemented as a part of Phase I SWMU Characterization, RFI Workplan, Lockwood Corporation, Gering, Nebraska, NED 044101442. This report is being submitted in accordance with Section 4.1 of the Lockwood authored and EPA modified and approved RFI Workplan.

If you have any questions regarding the results, please contact me at (402) 479-2200.

Sincerely,

HWS TECHNOLOGIES INC.

Sean D. Brown
Senior Project Engineer

SDB/mss
Enclosed
52-5232.0000
EN4B
pc: Barb Shaver, Lockwood Corp.
Dave Wisch, NDEC
Tom O'Connor, HWST

Introduction

HWS Technologies Inc. (HWS) was contracted by Lockwood Corporation to implement itemized procedures outlined in the RCRA Facility Investigation (RFI) Lockwood Corporation, Gering, Nebraska originally authored by Lockwood Corporation and revised by the Regional Administrator of the EPA February 1992. Lockwood understands that the plan modified by the Regional Administrator is the approved plan and understands that it is obligated to implement the plan according the schedules outlined in the plan. Included below is a data summary and report of findings for the soil sampling portion of the Phase I SWMU characterization.

Phase I - Field Activities-Soil Sampling

HWS personnel performed the soil sampling portion of the Phase I SWMU characterization during the week of April 20, 1992. Prior to initiation of field activities, an initial survey of all SWMU's was conducted with Lockwood personnel to determine appropriate timing of field activities and to determine if any obstructions to sampling efforts were present.

Sampling was conducted in conformance with Section 1.0 of Phase I characterization plan for initial soil screening/verification. The objective of the sampling activities is to corroborate the "release" determination established during RFA activities. In particular, Phase I soil sampling activities were conducted to assess whether any constituents are present above proposed EPA action levels for corrective action under RCRA.

SWMU Characterization

Hazardous Waste Storage Area

Figure 2 is a drawing of the Hazardous Waste Storage Area. The area has been changed to accommodate a 20' x 20' storage area with secondary containment as shown. The south most fence has been moved ten (10) feet to the north. Depicted on the drawing are the eight (8) discrete VOC sample locations and the grid system (5' x 4') from which four (4) composite samples were collected. Each composite sample within each subarea

(subareas A, B, C, D) was comprised of surface soil aliquots (0-6") collected from an area in the center of each subgrid. The composite from each subarea was analyzed for select metals (arsenic, cadmium, chromium, lead, silver, and zinc) and semi-volatile organic components.

Table 1 shows the results of analyses for all soil samples collected. Results of the analyses for the hazardous waste storage area can be summarized as follows:

EPA Method 8240:	No VOC's detected.
EPA Method 625:	No semi-volatile compounds detected.
Metals:	Lead reported at 460 (mg/kg) ppm from composite-area B and 260 (mg/kg) ppm from composite-area C. No formal standard presently exits as a part of RCRA corrective action, however, the CERCLA standard for lead in soil in industrial areas is 500-1000 ppm.

Waste Oil Storage Area

Figure 3 is a drawing of the Waste Oil Storage Area. Depicted on the drawing are the four (4) discrete VOC sample locations and the grid system (5' x 5') from which four (4) composite samples were collected. Each composite sample within each subarea (Subareas A, B, C, D) was comprised of surface soil aliquots (0-6") collected from an area in the center of each subgrid. The composite from each subarea was analyzed for select metals (arsenic, cadmium, chromium, lead, silver, and zinc) and semi-volatile components.

Table 1 shows the results of the analyses for all soil samples collected. Results of the analyses for the waste oil storage area can be summarized as follows:

EPA Method 8240:	No VOC's detected.
EPA Method 625:	Bis (2-ethylhexyl) phthalate detected at 0.41 ug/g from composite-area C. This value is more than one hundred times below the EPA action level.
Metals:	All metal concentrations found are below EPA action levels.

Scrap Metal Waste Bin Area

Figure 4 is a drawing of the scrap metal waste bin area. An approximate 20' x 20' storage pad, bermed, with secondary containment has been added as shown. Depicted on the drawing is the one (1) discrete VOC sample location and the grid system (1' x 1') from which one (1) composite sample was collected. The composite was comprised of surface soil aliquots (0-6") collected from an area in the center of each subgrid. The composite was analyzed for select metals (arsenic, cadmium, chromium, lead, silver, and zinc) and semi-volatile organic components.

Table 1 shows the results of analyses for all soil samples collected. Results of the analyses for the scrap metal waste bin area can be summarized as follows:

EPA Method 8240:	No VOC's detected.
EPA Method 625:	No semi-volatiles detected.
Metals:	All metal concentrations found are below EPA action levels.

Raw Product Storage Area

Figure 5 is a drawing of the Raw Product Storage Area. The sampling area has been changed to accommodate a 20' x 20' storage area with secondary containment as shown.

The Raw Product Storage Area has also been extended to the west to reflect past and present actual use conditions. Sampling activities utilizing the sampling grid system shown would adequately defined the original release determination. Depicted on the drawing are the three (3) discrete VOC sample locations and the grid system (5' x 5") from which three (3) composite samples were collected. The composite from each subarea was analyzed for select metals (arsenic, cadmium, chromium, lead, silver, and zinc) and semi-volatile organic components.

Table 1 shows the results of analyses for all soil samples collected. Results of the analyses for the Raw Product Storage Area can be summarized as follows:

EPA Method 8240:	No VOC's detected.
EPA Method 625:	No semi-volatiles detected.
Metals:	Lead reported at 240 (mg/kg) ppm from composite-area C and 240 (mg/kg) ppm from composite-area A. No formal standard exists as a part of RCRA corrective action, however, the CERCLA standard for lead in soil in industrial areas is 500-1,000 ppm.

Conclusions and Recommendations

Section 1.1, paragraph 2 of the Lockwood authored and EPA modified and approved RFI Workplan states the following:

"The objective of this initial sampling effort (Phase I) is to begin defining the horizontal extent of contamination that may be associated with these SWMUs. The need for additional sampling in these areas to address vertical migration and surface water runoff will be based on the concentration of contaminants detected. These Phase I values will be compared to the proposed U.S. EPA action levels for Corrective Actions under RCRA; or where no RCRA standard has been proposed, commonly used standards at CERCLA

sites in Region VII will be considered (Table 1). **For the SWMUs where EPA action levels (Table 1.0) are exceeded**, Lockwood proposes to proceed with Phase II sampling (Section 5.0), which will begin the process of determining the vertical extent of contamination and continue defining the horizontal extent of contamination."

Based on the results found from Phase I soil sampling activities, no further soil sampling activities (Phase II) are proposed.

FIGURE 2

Waste Storage Area

TABLE 1. Lockwood RFI: Phase I SWMU Characterization. Soil Sampling Results

Analytical Method / Analyte	EPA Action Levels and Units																								
		SMWBA	*ABWMS (Duplicate)	RPSA-C	RPSA-B	RPSA-A	WOSA-A	WOSA-D	WOSA-C	WOSA-B	HWSA-D	HWSA-C	HWSA-B	HWSA-A	HWSA-D1	HWSA-D2	HWSA-C1	HWSA-C2	HWSA-B1	HWSA-B2	*ASWH (Duplicate)	HWSA-A1	HWSA-A2	TripBlank
EPA GC/MS VOC 8240 (Discrete Samples)																									
Acetone	8,000 ug/g	<10.0	<10.0	<40	<40	<40	<40	<40	<40	<40	-	-	-	-	<40	<40	<40	<40	<40	<40	<40	<40	<40	<100
Acrolein	NL ug/g	<10.0	<10.0	<40	<40	<40	<40	<40	<40	<40	-	-	-	-	<40	<40	<40	<40	<40	<40	<40	<40	<40	<100
Acrylonitrile	1.0 ug/g	<10.0	<10.0	<40	<40	<40	<40	<40	<40	<40	-	-	-	-	<40	<40	<40	<40	<40	<40	<40	<40	<40	<100
Benzene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Bromodichloromethane	0.5 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Bromoform	2,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Bromomethane	100 ug/g	<1.0	<1.0	<4	<4	<4	<4	<4	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10
2-Butanone (Methyl ethyl ketone)	4,000 ug/g	<10.0	<10.0	<40	<40	<40	<40	<40	<40	<40	-	-	-	-	<40	<40	<40	<40	<40	<40	<40	<40	<40	<100
Carbon disulfide	8,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Carbon tetrachloride	5.0 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Chlorobenzene	2,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Chlorodibromomethane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Chloroethane	NL ug/g	<1.0	<1.0	<4	<4	<4	<4	<4	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10
2-Chloroethyl vinyl ether	NL ug/g	<1.0	<1.0	<4	<4	<4	<4	<4	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10
Chloroform	100 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Chloromethane	NL ug/g	<1.0	<1.0	<4	<4	<4	<4	<4	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10
Dibromomethane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Total 1,4-Dichlorobutene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Dichlorodifluoromethane	20,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,1-Dichloroethane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,2-Dichloroethane	8.0 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,1-Dichloroethene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Tetrachloroethene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Total 1,2-dichloroethene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,2-Dichloropropene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
cis-1,3-Dichloroporpene	20 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
trans-1,3-Dichloropropene	20 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Ethanol	NL ug/g	<500	<500	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	-	-	-	-	<2,000	<2,000	2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<2,000	<5,000
Ethylbenzene	8,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Ethyl methacrylate	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
2-Hexanone	NL ug/g	<5.0	<5.0	<20	<20	<20	<20	<20	<20	<20	-	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<50
Iodomethane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Methylene chloride	90 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
4-Methyl-2-pentanone	NL ug/g	<5.0	<5.0	<20	<20	<20	<20	<20	<20	<20	-	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<50
Styrene	20,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,1,2,2-Tetrachloroethane	40 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Toluene	20,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5

TABLE 1. Lockwood RFI: Phase I SWMU Characterization. Soil Sampling Results

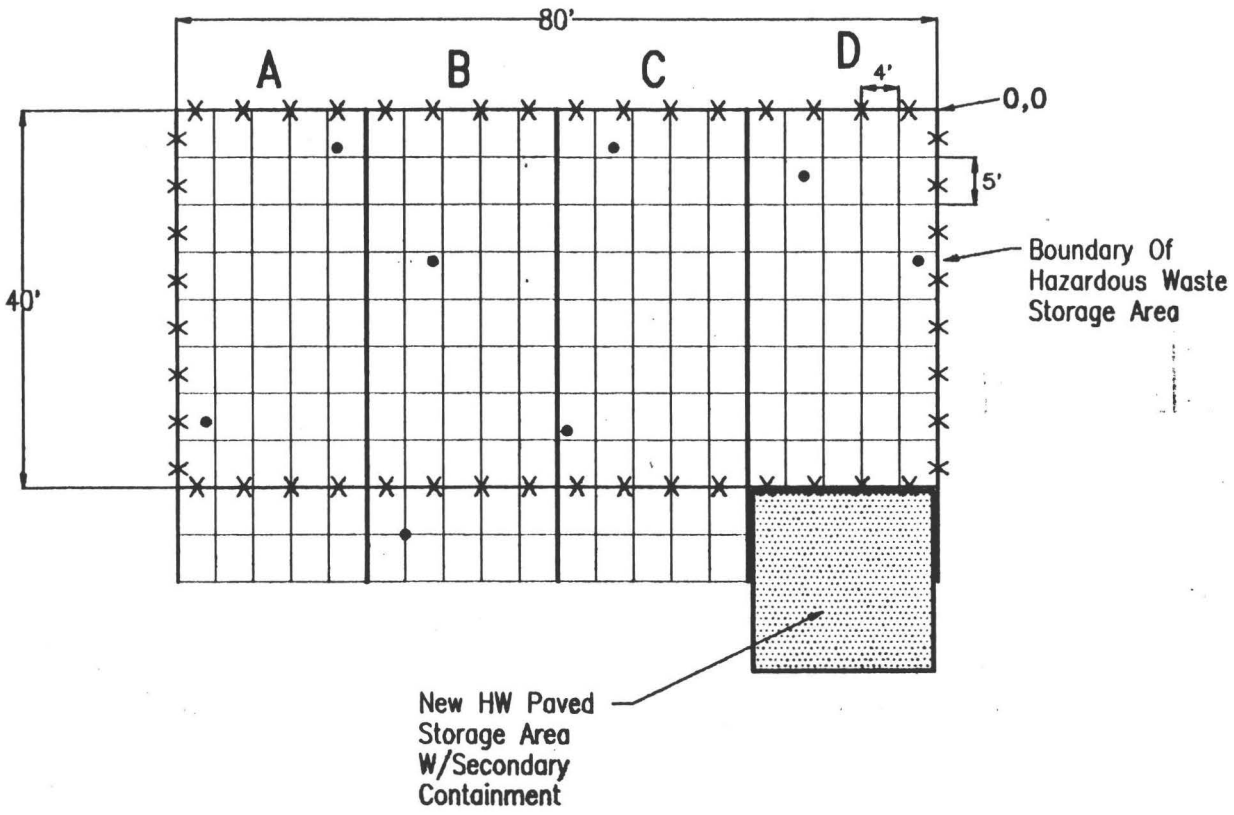
Analytical Method / Analyte	EPA Action Levels and Units	SMWBA	*ABWMS (Duplicate)	RPSA-C	RPSA-B	RPSA-A	WOSA-A	WOSA-D	WOSA-C	WOSA-B	HWSA-D	HWSA-C	HWSA-B	HWSA-A	HWSA-D1	HWSA-D2	HWSA-C1	HWSA-C2	HWSA-B1	HWSA-B2	*ASWH (Duplicate)	HWSA-A1	HWSA-A2	TripBlank
1,1,1-Trichloroethane	7,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,1,2-Trichloroethane	100 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Trichloroethene	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Trichlorofluoromethane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
1,2,3-Trichloropropane	NL ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
Vinyl acetate	NL ug/g	<5.0	<5.0	<20	<20	<20	<20	<20	<20	<20	-	-	-	-	<20	<20	<20	<20	<20	<20	<20	<20	<20	<50
Vinyl chloride	NL ug/g	<1.0	<1.0	<4	<4	<4	<4	<4	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<10
Total Xylenes	200,000 ug/g	<0.5	<0.5	<2	<2	<2	<2	<2	<2	<2	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5
TTO Base Neutral 625 (Composite Samples)																								
Bis(2-chloroethyl) ether	0.6 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Bis(2-chloroisopropyl) ether	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
N-Nitroso-di-n-propylamine	0.1 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	60 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	40 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Isophorone	2,000 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Bis(2-chlorlethoxy) methane	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	2,000 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Naphthalene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	60 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	1.0 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Acenaphthene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
4-Chlorophenyl phenyl ether	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Fluorene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Diethyl phthalate	60,000 ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
4-bromophenyl phenyl ether	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Phenanthrene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Anthracene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Di-n-butyl phthalate	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Fluoranthene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-
Pyrene	NL ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-

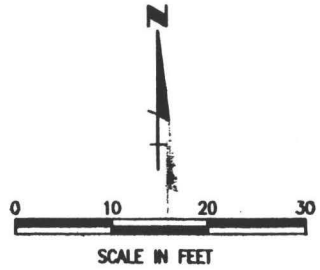
TABLE 1. Lockwood RFI: Phase I SWMU Characterization. Soil Sampling Results

Analytical Method / Analyte	EPA Action Levels and Units		SMWBA	*ABWMS (Duplicate)	RPSA-C	RPSA-B	RPSA-A	WOSA-A	WOSA-D	WOSA-C	WOSA-B	HWSA-D	HWSA-C	HWSA-B	HWSA-A	HWSA-D1	HWSA-D2	HWSA-C1	HWSA-C2	HWSA-B1	HWSA-B2	*ASWH (Duplicate)	HWSA-A1	HWSA-A2	TripBlank
Butyl benzyl phthalate	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
3-3'-Dichlorobenzidine	NL	ug/g	<6.6	<6.6	<6.6	<6.6	<6.6	<6.6	<0.66	<0.66	<6.6	<0.66	<0.66	<0.66	<0.66	-	-	-	-	-	-	-	-	-	-	-
Chrysene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Bis(2-ethylhexyl) phthalate	50	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	0.41	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Di-n-octyl phthalate	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
benzo(a)pyrene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Dibenz(a,h)anthracene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Benzo(g,h,i)perylene	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
TTO Acids 625 (Composite Sample)																										
Phenol	50,000	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	400	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2-4-Dimethylphenol	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2-4-Dichlorophenol	200	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	40	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	200	ug/g	<16.6	<16.6	<16.6	<16.6	<16.6	<16.6	<1.66	<1.66	<16.6	<1.66	<1.66	<1.66	<1.66	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	NL	ug/g	<8.3	<8.3	<8.3	<8.3	<8.3	<8.3	<0.83	<0.83	<8.3	<0.83	<0.83	<0.83	<0.83	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	NL	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	2,000	ug/g	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3	<0.33	<0.33	<3.3	<0.33	<0.33	<0.33	<0.33	-	-	-	-	-	-	-	-	-	-	-
Metals (Composite Sample)																										
Arsenic, Total	80	mg/Kg	6.6	9.4	9.6	8.0	8.6	12	5.46	6.3	7.0	10	10	5.8	8.1	-	-	-	-	-	-	-	-	-	-	-
Cadmium, Total	40	mg/Kg	< 0.50	< 0.50	< 0.50	< 0.50	5.8	< 0.50	< 0.50	< 0.50	< 0.50	0.99	1.10	1.2	1.3	-	-	-	-	-	-	-	-	-	-	-
Chromium, Total	400	mg/Kg	31	27	33	47	29	17	10	10	21	9.3	9.3	10	14	-	-	-	-	-	-	-	-	-	-	-
Lead, Total	**500	mg/Kg	95	74	240	180	240	69	18	18	91	110	140	460	280	-	-	-	-	-	-	-	-	-	-	-
Silver, Total	200	mg/Kg	< 0.50	0.50	< 0.50	< 0.50	< 0.50	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	-	-	-	-	-	-	-	-	-	-	-
Zinc, Total	NL	mg/Kg	240	190	210	1,100	8,700	370	240	130	230	4,500	4,500	2,400	3,100	-	-	-	-	-	-	-	-	-	-	-

** Denotes CERCLA action level

FIGURE 4





LEGEND

- SOIL SAMPLE (0-6")

SAMPLE LOCATIONS FROM 0,0 POINT

EPA METHOD 8240

HWSA-D1	14W, 7S
HWSA-D2	2W, 16S
HWSA-C1	34W, 4S
HWSA-C2	39W, 34S
HWSA-B1	53W, 16S
HWSA-B2	56W, 45S
HWSA-A1	77W, 33S
HWSA-A2	63W, 4S

SEMI VOLATILES, METALS

COMPOSITES IN CONFORMANCE WITH WORK PLAN

5'x4' Subgrids Within Each Subarea

Figure 2

HAZARDOUS WASTE STORAGE AREA

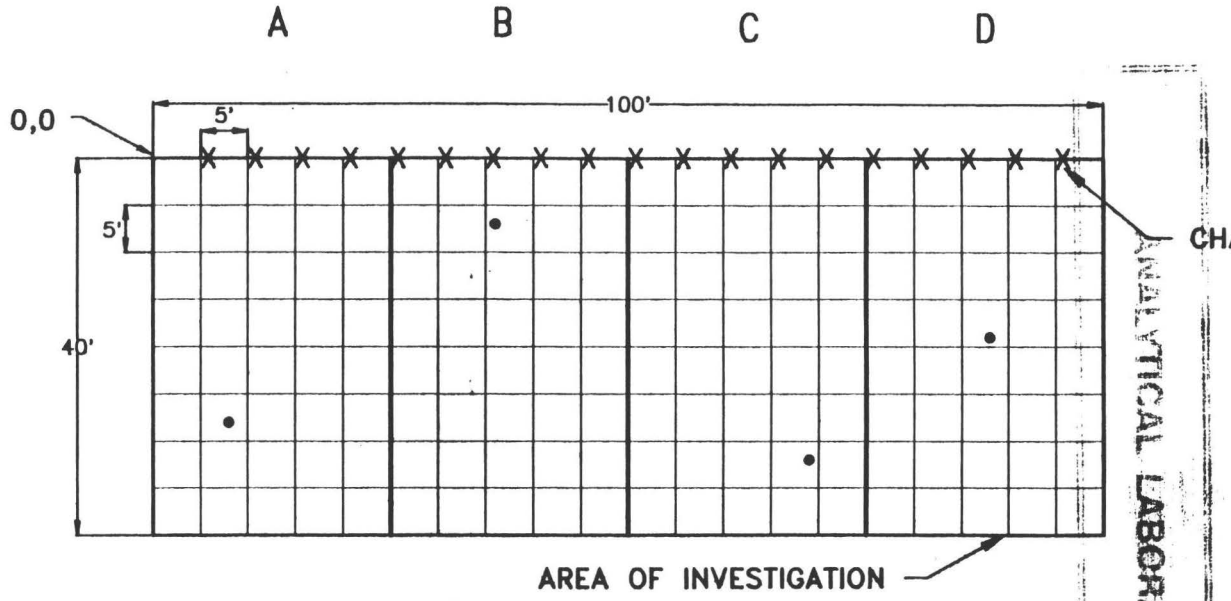
LOCKWOOD CORP

Gering, NE

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

FIGURE1 MAY 1991



ANALYTICAL LABORATORY REPORT

LEGEND

● SOIL SAMPLE (0-6")

SAMPLE LOCATIONS FROM 0,0 POINT

WOSA-A	19W, 12S
WOSA-B	32W, 31S
WOSA-C	7W, 64S
WOSA-D	28W, 92S

SEMI VOLATILES, METALS
COMPOSITES IN CONFORMANCE WITH WORK PLAN

5'x5' Subgrids Within Each Subarea

N

0 10 20 30

SCALE IN FEET

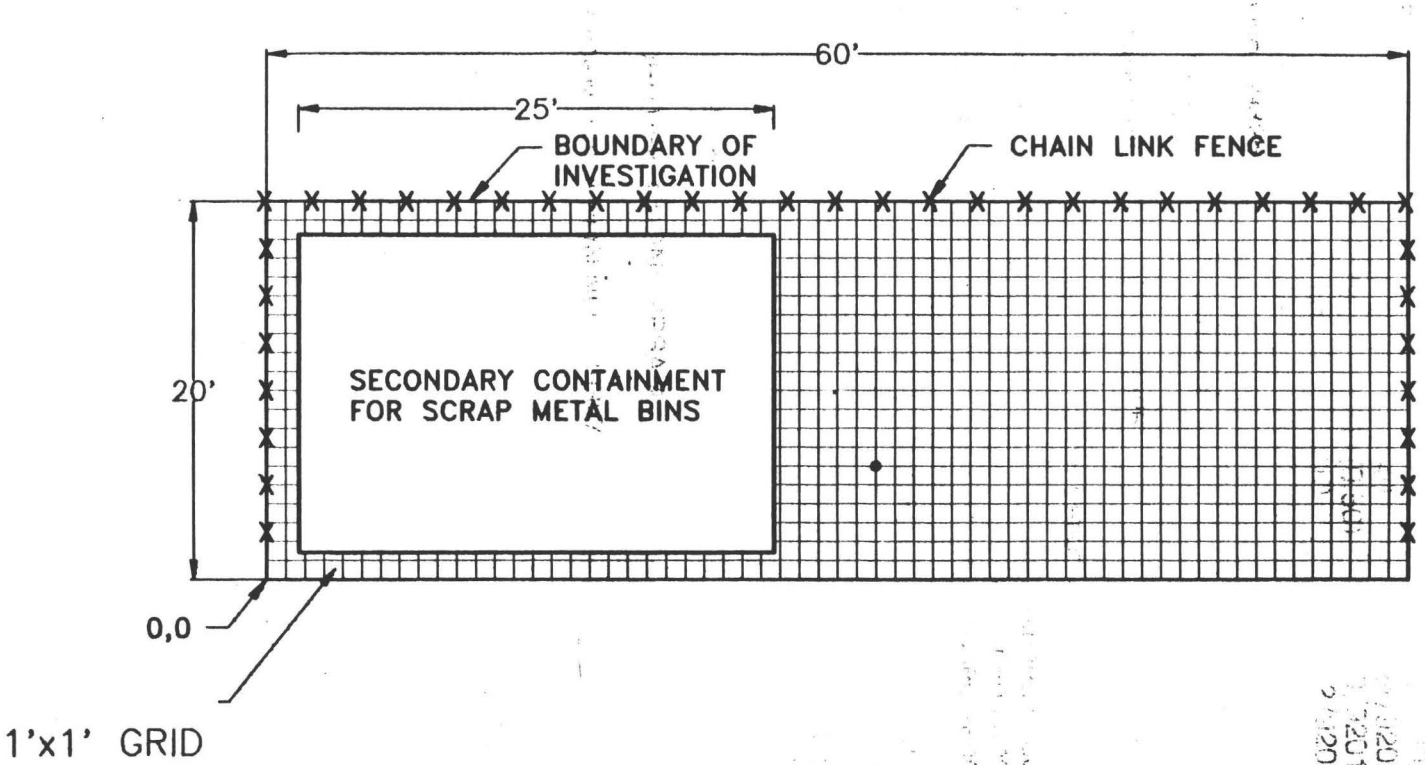
Figure 3

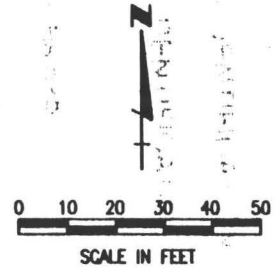
WASTE OIL STORAGE AREA

LOCKWOOD CORP
Gering, NE

HWS Technologies Inc.
LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

FIGURE 2 MAY 1991





LEGEND

- SOIL SAMPLE (0-6")

SAMPLE LOCATIONS FROM 0,0 POINT

EPA METHOD 8240

MWBA-1 , 32E, 6N

SEMI VOLATILES, METALS
COMPOSITES IN CONFORMANCE WITH WORK PLAN

1'x1' Subgrids Within Entire Area

Figure 4

SCRAP METAL WASTE BIN AREA EAST OF MACHINE SHOP

LOCKWOOD CORP
Gering, NE

HMS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

FIGURE 3 MAY 1991

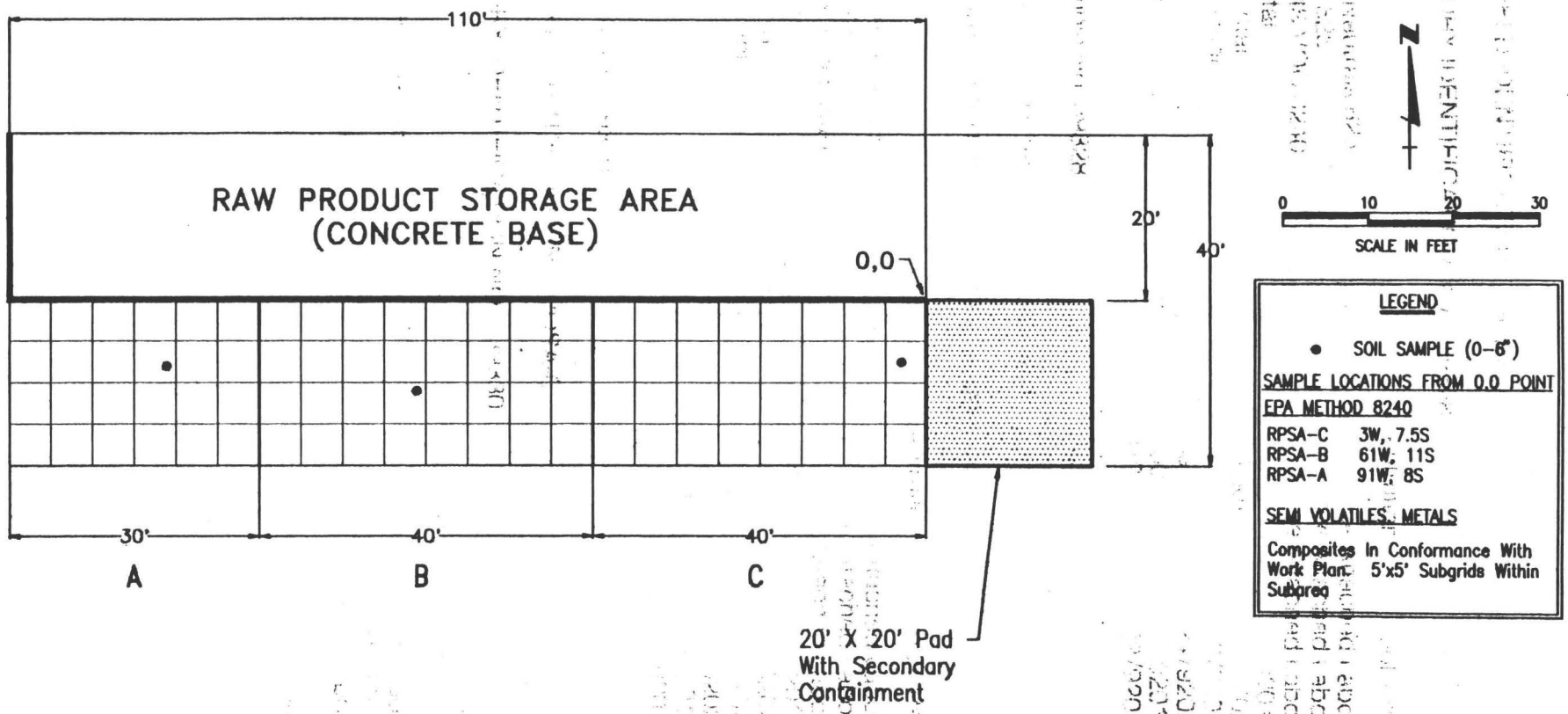


Figure 5

RAW PRODUCT STORAGE AREA

LOCKWOOD CORP
Gering, NE

HWS Technologies Inc.
LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

FIGURE 4 MAY 1991

HWS TECHNOLOGIES INC.
825 J Street P.O. Box 80358 Lincoln, Nebraska 68501 Telephone (402) 479-220

ANALYTICAL LABORATORY REPORT

CLIENT: HWS Technologies Inc.
ATTN: Sean Brown
825 J Street
Lincoln, NE 68508

RE: Lockwood Corp.

DATE COLLECTED: 04-20-92
DATE REPORTED: 05-04-92 (05-11-92)
DATE RECEIVED: 04-27-92
PURCHASE AUTHORIZATION: C31460
JOB NO.: 72-52-5232.00
REPORT NO.: 92451 (Additional)

CLIENT/FIELD IDENTIFICATION: SMWBA

LABORATORY IDENTIFICATION NO.: 39322

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/Kg	6.8	5/92013	043092	DM
Cadmium Total	mg/Kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/Kg	31	12/92025	050192	DM
Lead Total	mg/Kg	95	24/92027	050192	DM
Silver Total	mg/Kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/Kg	240	32/92018	050192	DM

End of Sample No. 39322.

CLIENT/FIELD IDENTIFICATION: ABWMS

LABORATORY IDENTIFICATION NO.: 39323

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/L	See Attached Laboratory Report			
TTO Acids 625	ug/L	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/L	See Attached Laboratory Report			
Arsenic Total	mg/kg	9.4	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	27	12/92025	050192	DM
Lead Total	mg/kg	74	34/92027	050192	DM
Silver Total	mg/kg	0.50	3/92019	050192	DM
Zinc Total	mg/kg	190	32/92018	050192	DM

End of Sample No. 39323.

CLIENT/FIELD IDENTIFICATION: Trip Blank

LABORATORY IDENTIFICATION NO.: 39324

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39324. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: RPSA-C

LABORATORY IDENTIFICATION NO.: 39325

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	9.6	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	33	12/92025	050192	DM
Lead Total	mg/kg	240	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	210	32/92018	050192	DM

End of Sample No. 39325.

CLIENT/FIELD IDENTIFICATION: RPSA-B

LABORATORY IDENTIFICATION NO.: 39326

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	9.0	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	47	12/92025	050192	DM
Lead Total	mg/kg	180	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	1100	32/92018	050192	DM

End of Sample No. 39326.

CLIENT/FIELD IDENTIFICATION: RPSA-A

LABORATORY IDENTIFICATION NO.: 39327

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	8.8	5/92013	043092	DM
Cadmium Total	mg/kg	5.8	10/92026	050192	DM
Chromium Total	mg/kg	29	12/92025	050192	DM
Lead Total	mg/kg	240	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	6700	32/92018	050192	DM

End of Sample No. 39327. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: WOSA-A

LABORATORY IDENTIFICATION NO.: 39328

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	12	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	17	12/92025	050192	DM
Lead Total	mg/kg	69	24/92027	050192	DM
Silver Total	mg/kg	0.50	3/92019	050192	DM
Zinc Total	mg/kg	370	32/92018	050192	DM

End of Sample No. 39328.

CLIENT/FIELD IDENTIFICATION: WOSA-D

LABORATORY IDENTIFICATION NO.: 39329

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	5.48	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	10	12/92025	050192	DM
Lead Total	mg/kg	18	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	240	32/92018	050192	DM

End of Sample No. 39329.

CLIENT/FIELD IDENTIFICATION: WOSA-C

LABORATORY IDENTIFICATION NO.: 39330

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	6.3	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	10	12/92025	050192	DM
Lead Total	mg/kg	18	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	130	32/92018	050192	DM

End of Sample No. 39330. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: WOSA-B

LABORATORY IDENTIFICATION NO.: 39331

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	7.0	5/92013	043092	DM
Cadmium Total	mg/kg	ND (0.50)	10/92026	050192	DM
Chromium Total	mg/kg	21	12/92025	050192	DM
Lead Total	mg/kg	91	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	230	32/92018	050192	DM

End of Sample No. 39331.

CLIENT/FIELD IDENTIFICATION: HWSA-D

LABORATORY IDENTIFICATION NO.: 39332

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	10	5/92013	043092	DM
Cadmium Total	mg/kg	0.89	10/92026	050192	DM
Chromium Total	mg/kg	9.3	12/92025	050192	DM
Lead Total	mg/kg	110	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	4500	32/92018	050192	DM

End of Sample No. 39332.

CLIENT/FIELD IDENTIFICATION: HWSA-C

LABORATORY IDENTIFICATION NO.: 39333

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	10	5/92013	043092	DM
Cadmium Total	mg/kg	1.1	10/92026	050192	DM
Chromium Total	mg/kg	9.3	12/92025	050192	DM
Lead Total	mg/kg	140	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	4500	32/92018	050192	DM

End of Sample No. 39333. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: HWSA-B

LABORATORY IDENTIFICATION NO.: 39334

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	5.9	5/92013	043092	DM
Cadmium Total	mg/kg	1.2	10/92026	050192	DM
Chromium Total	mg/kg	10	12/92025	050192	DM
Lead Total	mg/kg	460	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	2400	32/92018	050192	DM

End of Sample No. 39334.

CLIENT/FIELD IDENTIFICATION: HWSA-A

LABORATORY IDENTIFICATION NO.: 39335

Analysis	Units	Concentration	Book/Page	Date	Analyst
TTO Base Neutrals 625	ug/g	See Attached Laboratory Report			
TTO Acids 625	ug/g	See Attached Laboratory Report			
Arsenic Total	mg/kg	8.1	5/92013	043092	DM
Cadmium Total	mg/kg	1.3	10/92026	050192	DM
Chromium Total	mg/kg	14	12/92025	050192	DM
Lead Total	mg/kg	260	24/92027	050192	DM
Silver Total	mg/kg	ND (0.50)	3/92019	050192	DM
Zinc Total	mg/kg	3100	32/92018	050192	DM

End of Sample No. 39335.

CLIENT/FIELD IDENTIFICATION: HWSA-D1

LABORATORY IDENTIFICATION NO.: 39336

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39336.

CLIENT/FIELD IDENTIFICATION: HWSA-D2

LABORATORY IDENTIFICATION NO.: 39337

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39337. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: HWSA-C1

LABORATORY IDENTIFICATION NO.: 39338

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39338.

CLIENT/FIELD IDENTIFICATION: HWSA-C2

LABORATORY IDENTIFICATION NO.: 39339

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39339.

CLIENT/FIELD IDENTIFICATION: HWSA-B1

LABORATORY IDENTIFICATION NO.: 39340

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39340.

CLIENT/FIELD IDENTIFICATION: HWSA-B2

LABORATORY IDENTIFICATION NO.: 39341

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39341.

CLIENT/FIELD IDENTIFICATION: HWSA-A1

LABORATORY IDENTIFICATION NO.: 39342

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39342.

CLIENT/FIELD IDENTIFICATION: HWSA-A2

LABORATORY IDENTIFICATION NO.: 39343

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39343. Report No. 92451 Continued on Next Page.

CLIENT/FIELD IDENTIFICATION: ASWH

LABORATORY IDENTIFICATION NO.: 39344

Analysis	Units	Concentration	Book/Page	Date	Analyst
EPA GC/MS VOC 8240	ug/g	See Attached Laboratory Report			

End of Sample No. 39344.

CLIENT/FIELD IDENTIFICATION: Quality Assurance Results

LABORATORY IDENTIFICATION NO.: 39322-39335

Element	Q.C. Id. #	Result (mg/L)	True Value (mg/L)	% Recovery	Book/Page	Date	Analyst
Silver	Inhouse QC	0.50	0.50	100%	3/92019	050192	DM
Arsenic	EPA QC 378 #5	0.035	0.031	112%	5/92013	040392	DM
Cadmium	Inhouse QC	1.05	1.00	105%	10/92026	050192	DM
Chromium	Inhouse QC	2.46	2.50	98%	12/920258	050192	DM
Lead	Inhouse QC	5.16	6.00	103%	24/92027	050192	DM
Zinc	Inhouse QC	0.98	1.00	98%	32/92018	050192	DM

End of Quality Assurance Results.

Analysis	Detection Limit	Prep. Method	Test Method	Description
Arsenic, Total	0.25 mg/kg	3050	EPA 7060	A.A./Furnace
Cadmium, Total	5.0 mg/kg	3050	EPA 7080	A.A./Flame
Chromium, Total	2.5 mg/kg	3050	EPA 7130	A.A./Flame
Lead, Total	5.0 mg/kg	3050	EPA 7420	A.A./Flame
Silver, Total	0.50 mg/kg	3050	EPA 7760	A.A./Flame
Zinc, Total	0.50 mg/kg	3050	EPA 7950	A.A./Flame

End of Report No. 92451. Report No. 92451 Continued on Next Page.

Sample collection techniques, sample containers, sample sizes, sample preservation and physical/chemical analyses were performed in accordance with "Methods for Chemical Analysis of Water and Wastes," EPA 600/4-79-20 and "Test Methods for Evaluating Solid Waste," EPA SW-846.

ND ( ), where denoted, indicates none detected with the detection limit in parentheses.

By Paul Mignon
Manager, Analytical Services Division

LOCKWOOD

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

Date 4-20-91 Project No 72-52-5232.000

Re LOCKWOOD CORP.

Address SCOTTS BLUFF, NE.

Facility Contact

Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.							
39322	SMWBA	4/20/92	1710	SOIL	Cool & 4°C							
39323	ABWMS	4/20/92	1710	SOIL	Cool to 4°C							
39324	TRIP BLANK	4/20/92	1600	WATER	Cool to 4°C							

Special Handling and/or Storage Cool to 4°C

These are transmitted for the following analysis See Sampling Plan for Method
Metals, Semi-Vol, VOC-8240 ; Trip Blank - VOC only

SAMPLE COLLECTOR TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) 4/20/92 / 1710 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Cortes	4/27/92 11:10	Tracy Sizemore	4/27/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

Date 4-22-92 Project No 72-52-5232.0000

Re Lockwood Corp.

Address Scotts Bluff, NE

Facility Contact _____

Phone No ( ) _____

We are sending you the following samples (List Other Items) _____

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.							
39325	RPSA-C	4/22/92	1020	Soil	cool to 4°C							
39326	RPSA-B	4/22/92	1142	Soil	cool to 4°C							
39327	RPSA-A	4/22/92	1420	Soil	Cool to 4°C							

Special Handling and/or Storage cool to 4°C

These are transmitted for the following analysis See Sampling Plan for method
Semi-Vol, VOC-8240, Metals

SAMPLE COLLECTOR. TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) 4/22/92 1420 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Cortes	4/27/92 11:10	Tracy Sizemore	4/27/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-96

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

PROJECT MANAGER

PROJECT NO.

PROJECT NAME/COMPANY: HWS TECHNOLOGIES

SAMPLER (Signature)

DATE/TIME

TESTS REQUESTED: BNA (625), 8240

LAB NO	DATE	TIME	COMP.	GRAB	SAMPLE IDENTIFICATION	NUM. OF CONTAINERS			
[redacted]	4/20/92	1710			39322	3	✓	✓	Soil
[redacted]	4/20/92	1710			39323	3	✓	✓	Soil
[redacted]	4/20/92	1600			39324	3	✓	✓	BNA Bottle missing discrepancy written per NOTE above 4/27
[redacted]	4/22/92	1020			39325	3	✓	✓	Soil
[redacted]	4/22/92	1142			39326	3	✓	✓	Soil
[redacted]	4/22/92	1420			39327	3	✓	✓	Soil

ALTERNATIVE LAB (IF REQUIRED)

COLL. LAB ID. NO.	LAB NO. FROM ABOVE	TO LAB NAME, LOCATION	DATE SHIPPED
	39322	A+L MIDWEST LABS OMAHA	4/27/92
	39323		
	39324		
	39325		
	39326		
	39327		

DO 625 TTO ANALYSIS ON SAMPLES with Both BNA AND 8240

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nancy Cortes	4/27/92	1330	Linda Mason	4-27	4:55	Linda Mason	4-28	8:40	Lori Peterson 8240's	4-28	8:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
						Linda Mason	4-28	7:00	Lori Peterson	4-28	7:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

To HWS Technologies Inc.
825 "J" Street
Lincoln, NE 68508

Date 4/20/92 Project No 72-52-5232.0000
Re Lockwood Corp.
Address Scottsbluff, NE
Facility Contact Bob Jacobson
Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.	Temperature AIR (°C)	Temperature WATER (°C)	pH (S.U.)	S.C. µmho/cm			
39328	WOSA-A	4/20/92	1050	Soil	cool to 4°C							
39329	WOSA-d	4/20/92	1130	Soil	cool to 4°C							
39330	WOSA-C	4/20/92	1400	Soil	cool to 4°C							
39331	WOSA-B	4/20/92	1430	Soil	cool to 4°C							

Special Handling and/or Storage cool to 4°C

These are transmitted for the following analysis See Sampling Plan for Methods
Semi Vol, Metals, VOC-8240

SAMPLE COLLECTOR TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) 4/20/92 1430 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Corbit	4/21/92 11:10	Tracy Sizemore	4/21/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-95

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

Date 4-21-92 Project No 72-52-5232.000

Re LOCKWOOD CORP

Address SCOTTS BLUFF, NE

Facility Contact Bob Jacobson

Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.							
39332	HWSA-d	4/21/92	1120	Soil	cool to 4°C							
39333	HWSA-C	4/21/92	1305	Soil	Cool to 4°C							
39334	HWSA-B	4/21/92	1645	Soil	Cool to 4°C							
39335	HWSA-A	4/21/92	1814	Soil	Cool to 4°C							

Special Handling and/or Storage Cool to 4°C

These are transmitted for the following analysis See Sampling Plan for Method Semi Vol, Metals

SAMPLE COLLECTOR TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) 4/21/92 1814 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Cortes	4/22/92 11:10	Tracy Sizemore	4/22/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-96

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

Date 4-21-92 Project No 72-52-5232.0000

Re LOCKWOOD CORP

Address SCOTTSBLUFF, NE

Facility Contact Bob Jacobson

Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.							
39336	HWSA-d1	4/21/92	1120	Soil	cool to 4°C							
39337	HWSA-d2	4/21/92	1125	Soil	cool to 4°C							
39338	HWSA-c1	4/21/92	1505	Soil	cool to 4°C							
39339	HWSA-c2	4/21/92	1509	Soil	cool to 4°C							

Special Handling and/or Storage cool to 4°C

These are transmitted for the following analysis See Sampling Plan for Method VOC - 8240

SAMPLE COLLECTOR TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) 4/21/92 1509 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Carter	4/22/92 / 11:10	Tracy Sizemore	4/22/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-96

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

PROJECT MANAGER

PROJECT NO.

PROJECT NAME/COMPANY: HWS TECHNOLOGIES

SAMPLER (Signature)

DATE/TIME

TESTS REQUESTED: BNA (625) / 8240

LAB NO.	DATE	TIME	COMP.	GRAB	SAMPLE IDENTIFICATION	NUM. OF CONTAINERS											
	4/20/92	1050			39328 31633	3	✓	✓									Soil
	4/20/92	1130			39329 31634	3	✓	✓									Soil
	4/20/92	1400			39330 31635	3	✓	✓									Soil
	4/20/92	1430			39331 31636	3	✓	✓									Soil
	4/20/92	1120			39332 31637	1	✓										
	4/20/92	1505			39333 31638	1	✓										

COLLABORATIVE LAB (IF REQUIRED)

COLL. LAB ID. NO.	LAB NO. FROM ABOVE	TO LAB NAME, LOCATION	DATE SHIPPED										
	39328	A:L MIDWEST LABS OMAHA	4/27/92	✓	✓								DO 625 TIO ANALYSIS
	39329			✓	✓								ON SAMPLES WITH BOTH
	39330			✓	✓								BNA AND 8240
	39331			✓	✓								
	39332			✓									
	39333			✓									

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nancy Cortes	4/27/92	1330	[signature]	4.27	4 55						
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Preserved: Yes No

Remarks:

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

PROJECT MANAGER

PROJECT NO.

PROJECT NAME/COMPANY: HWS TECHNOLOGIES

SAMPLER (Signature)

DATE/TIME

TESTS REQUESTED: BNA (625) 8240

LAB NO.	DATE	TIME	COMP.	GRAB	SAMPLE IDENTIFICATION		NUM. OF CON-TAINERS
	4/21/92	1645			39334	31639	1
	4/21/92	1814			39335	31640	1
	4/21/92	1120			39336	31641	2
	4/21/92	1125			39337	31642	2
	4/21/92	1505			39338	31643	2
	4/21/92	1509			39339	31644	2

[redacted]

soil

COLLABORATIVE LAB (IF REQUIRED)

COLL. LAB ID. NO.	LAB NO. FROM ABOVE	TO LAB NAME, LOCATION	DATE SHIPPED
	39334	A&L MIDWEST LABS OMAHA	4/22/92
	39335		
	39336		
	39337		
	39338		
	39339		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nancy Cortes	4/21/92	1330	[signature]	4/22	4:55						
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Preserved: Yes No

Remarks:

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

Date 4-21-92 Project No 72-52-5222.0000

Re LOCKWOOD CORP.

Address SCOTTS BLUFF, NE

Facility Contact Bob Jacobson

Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.							
39340	HWSA-B1	4/21/92	1645	Soil	cool to 4°C							
39341	HWSA-B2	4/21/92	1650	Soil	cool to 4°C							
39342	HWSA-A1	~~4/21/92~~	1814	Soil	cool to 4°C							
39343	HWSA-A2	~~4/21/92~~	1820	Soil	cool to 4°C							

Special Handling and/or Storage cool to 4°C

These are transmitted for the following analysis See Sampling Plan for method VOC-8240

SAMPLE COLLECTOR TRACY SIZEMORE (Name (Print)) Tracy Sizemore (Signature) / (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Cortez	4/22/92 11:10	Tracy Sizemore	4/22/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-96

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

To HWS Technologies Inc.
825 "J" Street
Lincoln, NE 68508

Date 4-21-92 Project No 72-52-5232.000
Re Lockwood Corp.
Address Scotts Bluff, NE
Facility Contact Bob Jacobsen
Phone No ( )

We are sending you the following samples (List Other Items)

LAB I.D. NO.	FIELD I.D. NO.	DATE	TIME	TYPE*	PRESER.	Temperature AIR (°C)	Temperature WATER (°C)	pH (S.U.)	S.C. µmho/cm			
39344	ASWH	4/21/92		Soil	Cool to 4°C							

Special Handling and/or Storage cool to 4°C

These are transmitted for the following analysis See Sample Plan for Method VOC -

SAMPLE COLLECTOR Traci Spencer (Name (Print)) Traci Spencer (Signature) 4/21/92 1814 (Date / Time)

COLLABORATIVE LAB (If required)

COLL. LAB. I.D. NO.	I.D. NO. (From Above)	TO LAB NAME	ANALYSIS REQUIRED	DATE SENT

CHAIN OF CUSTODY

Received By (Signature)	DATE/TIME	Relinquished By (Signature)	DATE/TIME
Nancy Cortes	4/22/92 11:10	Traci Spencer	4/22/92 11:10
	/		/
	/		/

* TYPE - Indicate water, soil, sludge, etc.
Distribution: Original: Accompanies Shipment
Copies: To Respective Lab and Coordinator Permanent Files

72-95

HWS Technologies Inc.

LINCOLN OFFICE
825 J St., Box 80358
Lincoln, NE 68501
402/479-2200

HAZARDOUS WASTE ANALYSIS REQUEST AND CHAIN OF CUSTODY SHEET

PROJECT MANAGER

PROJECT NO.

PROJECT NAME/COMPANY: H.W.S. TECHNOLOGIES

SAMPLER (Signature)

DATE/TIME

TESTS REQUESTED: 8240

LAB NO.	DATE	TIME	COMP.	GRAB	SAMPLE IDENTIFICATION	NUM. OF CONTAINERS
	4/21/92	1645			39340 31645	2
	4/21/92	1650			39341 31646	2
	4/21/92	1814			39342 31647	2
	4/21/92	1820			39343 31648	2
	4/21/92				39344 31649	2

Soil

COLLABORATIVE LAB (IF REQUIRED)

COLL. LAB ID. NO.	LAB NO. FROM ABOVE	TO LAB NAME, LOCATION	DATE SHIPPED
	39340	A:L MIDWEST LABS OMAHA	4/27/92
	39341		
	39342		
	39343		
	39344		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nancy Cortes	4/21/92	1330		4/27	4:55						
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Distribution: Original Accompanies Shipment; Copy to Coordinator Field Files

Preserved: Yes No

Remarks:

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1553 (Page 1 of 3)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

RECEIVED
MAY 12 1992
HWS

Date Received: 4-28-92

LAB NUMBER: 31627

SAMPLE ID: Soil, 39322 4-20-92 17:10

Analysis	Level Found	Det. Limit
Acetone	< 10.0 µg/g	10.0 µg/g
Acrolein	< 10.0 µg/g	10.0 µg/g
Acrylonitrile	< 10.0 µg/g	10.0 µg/g
Benzene	< 0.5 µg/g	0.5 µg/g
Bromodichloromethane	< 0.5 µg/g	0.5 µg/g
Bromoform	< 0.5 µg/g	0.5 µg/g
Bromomethane	< 1.0 µg/g	1.0 µg/g
2-Butanone (Methyl ethyl ketone)	< 10.0 µg/g	10.0 µg/g
Carbon disulfide	< 0.5 µg/g	0.5 µg/g
Carbon tetrachloride	< 0.5 µg/g	0.5 µg/g
Chlorobenzene	< 0.5 µg/g	0.5 µg/g
Chlorodibromomethane	< 0.5 µg/g	0.5 µg/g
Chloroethane	< 1.0 µg/g	1.0 µg/g
2-Chloroethyl vinyl ether	< 1.0 µg/g	1.0 µg/g
Chloroform	< 0.5 µg/g	0.5 µg/g
Chloromethane	< 1.0 µg/g	1.0 µg/g
Dibromomethane	< 0.5 µg/g	0.5 µg/g
Total 1,4-Dichlorobutene	< 0.5 µg/g	0.5 µg/g
Dichlorodifluoromethane	< 0.5 µg/g	0.5 µg/g
1,1-Dichloroethane	< 0.5 µg/g	0.5 µg/g
1,2-Dichloroethane	< 0.5 µg/g	0.5 µg/g
1,1-Dichloroethene	< 0.5 µg/g	0.5 µg/g
Tetrachloroethene	< 0.5 µg/g	0.5 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 0.5 µg/g	0.5 µg/g
1,2-dichloropropane	< 0.5 µg/g	0.5 µg/g
cis-1,3-Dichloropropene	< 0.5 µg/g	0.5 µg/g
trans-1,3-Dichloropropene	< 0.5 µg/g	0.5 µg/g
Ethanol	< 500 µg/g	500 µg/g
Ethylbenzene	< 0.5 µg/g	0.5 µg/g
Ethyl methacrylate	< 0.5 µg/g	0.5 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 0.5 µg/g	0.5 µg/g
Methylene chloride	< 0.5 µg/g	0.5 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 0.5 µg/g	0.5 µg/g
1,1,2,2-Tetrachloroethane	< 0.5 µg/g	0.5 µg/g
Toluene	< 0.5 µg/g	0.5 µg/g
1,1,1-trichloroethane	< 0.5 µg/g	0.5 µg/g
1,1,2-trichloroethane	< 0.5 µg/g	0.5 µg/g
Trichloroethene	< 0.5 µg/g	0.5 µg/g
Trichlorofluoromethane	< 0.5 µg/g	0.5 µg/g
1,2,3-Trichloropropane	< 0.5 µg/g	0.5 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 1.0 µg/g	1.0 µg/g
Total Xylenes	< 0.5 µg/g	0.5 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1553 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: ***Base Neutral Extractables - Soil***

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31627

SAMPLE ID: Soil, 39322 4-20-92 17:10

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1553 (Page 3 of 3) **Date: 5/11/92** M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31627 **SAMPLE ID: Soil, 39322 4-20-92 17:10**

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g	2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g	2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g	4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g	4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g	Pentachlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g			

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1554 (Page 1 of 3)

Date: 5/11/92 (m2)

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

SUBJECT: Volatile Organics Analysis - Method 8240

RECEIVED
MAY 12 1992
HWS

Date Received: 4-28-92

LAB NUMBER: 31628

SAMPLE ID: Soil, 39323 4-20-92 17:10

Analysis	Level Found	Det. Limit
Acetone	< 10.0 µg/g	10.0 µg/g
Acrolein	< 10.0 µg/g	10.0 µg/g
Acrylonitrile	< 10.0 µg/g	10.0 µg/g
Benzene	< 0.5 µg/g	0.5 µg/g
Bromodichloromethane	< 0.5 µg/g	0.5 µg/g
Bromoform	< 0.5 µg/g	0.5 µg/g
Bromomethane	< 1.0 µg/g	1.0 µg/g
2-Butanone (Methyl ethyl ketone)	< 10.0 µg/g	10.0 µg/g
Carbon disulfide	< 0.5 µg/g	0.5 µg/g
Carbon tetrachloride	< 0.5 µg/g	0.5 µg/g
Chlorobenzene	< 0.5 µg/g	0.5 µg/g
Chlorodibromomethane	< 0.5 µg/g	0.5 µg/g
Chloroethane	< 1.0 µg/g	1.0 µg/g
2-Chloroethyl vinyl ether	< 1.0 µg/g	1.0 µg/g
Chloroform	< 0.5 µg/g	0.5 µg/g
Chloromethane	< 1.0 µg/g	1.0 µg/g
Dibromomethane	< 0.5 µg/g	0.5 µg/g
Total 1,4-Dichlorobutene	< 0.5 µg/g	0.5 µg/g
Dichlorodifluoromethane	< 0.5 µg/g	0.5 µg/g
1,1-Dichloroethane	< 0.5 µg/g	0.5 µg/g
1,2-Dichloroethane	< 0.5 µg/g	0.5 µg/g
1,1-Dichloroethene	< 0.5 µg/g	0.5 µg/g
Tetrachloroethene	< 0.5 µg/g	0.5 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 0.5 µg/g	0.5 µg/g
1,2-dichloropropane	< 0.5 µg/g	0.5 µg/g
cis-1,3-Dichloropropene	< 0.5 µg/g	0.5 µg/g
trans-1,3-Dichloropropene	< 0.5 µg/g	0.5 µg/g
Ethanol	< 500 µg/g	500 µg/g
Ethylbenzene	< 0.5 µg/g	0.5 µg/g
Ethyl methacrylate	< 0.5 µg/g	0.5 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 0.5 µg/g	0.5 µg/g
Methylene chloride	< 0.5 µg/g	0.5 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 0.5 µg/g	0.5 µg/g
1,1,2,2-Tetrachloroethane	< 0.5 µg/g	0.5 µg/g
Toluene	< 0.5 µg/g	0.5 µg/g
1,1,1-trichloroethane	< 0.5 µg/g	0.5 µg/g
1,1,2-trichloroethane	< 0.5 µg/g	0.5 µg/g
Trichloroethene	< 0.5 µg/g	0.5 µg/g
Trichlorofluoromethane	< 0.5 µg/g	0.5 µg/g
1,2,3-Trichloropropane	< 0.5 µg/g	0.5 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 1.0 µg/g	1.0 µg/g
Total Xylenes	< 0.5 µg/g	0.5 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1554 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31628

SAMPLE ID: Soil, 39323 4-20-92 17:10

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1554 (Page 3 of 3)

Date: 5/11/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31628

SAMPLE ID: Soil, 39323, 4-20-92 17:10

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g	2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g	2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g	4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g	4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g	Pentachlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g			

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1555

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

MAY 12 1992

HWS

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31629

SAMPLE ID: Water, 39324 4-20-92 16:00

Analysis	Level Found	Det. Limit
Acetone	< 100 µg/L	100 µg/L
Acrolein	< 100 µg/L	100 µg/L
Acrylonitrile	< 100 µg/L	100 µg/L
Benzene	< 5 µg/L	5 µg/L
Bromodichloromethane	< 5 µg/L	5 µg/L
Bromoform	< 5 µg/L	5 µg/L
Bromomethane	< 10 µg/L	10 µg/L
2-Butanone (Methyl ethyl ketone)	< 100 µg/L	100 µg/L
Carbon disulfide	< 5 µg/L	5 µg/L
Carbon tetrachloride	< 5 µg/L	5 µg/L
Chlorobenzene	< 5 µg/L	5 µg/L
Chlorodibromomethane	< 5 µg/L	5 µg/L
Chloroethane	< 10 µg/L	10 µg/L
2-Chloroethyl vinyl ether	< 10 µg/L	10 µg/L
Chloroform	< 5 µg/L	5 µg/L
Chloromethane	< 10 µg/L	10 µg/L
Dibromomethane	< 5 µg/L	5 µg/L
Total 1,4-Dichlorobutene	< 5 µg/L	5 µg/L
Dichlorodifluoromethane	< 5 µg/L	5 µg/L
1,1-Dichloroethane	< 5 µg/L	5 µg/L
1,2-Dichloroethane	< 5 µg/L	5 µg/L
1,1-Dichloroethene	< 5 µg/L	5 µg/L
Tetrachloroethene	< 5 µg/L	5 µg/L

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 5 µg/L	5 µg/L
1,2-Dichloropropane	< 5 µg/L	5 µg/L
cis-1,3-Dichloropropene	< 5 µg/L	5 µg/L
trans-1,3-Dichloropropene	< 5 µg/L	5 µg/L
Ethanol	< 5,000 µg/L	5,000 µg/L
Ethylbenzene	< 5 µg/L	5 µg/L
Ethyl methacrylate	< 5 µg/L	5 µg/L
2-Hexanone	< 50 µg/L	50 µg/L
Iodomethane	< 5 µg/L	5 µg/L
Methylene chloride	< 5 µg/L	5 µg/L
4-Methyl-2-pentanone	< 50 µg/L	50 µg/L
Styrene	< 5 µg/L	5 µg/L
1,1,2,2-Tetrachloroethane	< 5 µg/L	5 µg/L
Toluene	< 5 µg/L	5 µg/L
1,1,1-Trichloroethane	< 5 µg/L	5 µg/L
1,1,2-Trichloroethane	< 5 µg/L	5 µg/L
Trichloroethene	< 5 µg/L	5 µg/L
Trichlorofluoromethane	< 5 µg/L	5 µg/L
1,2,3-Trichloropropane	< 5 µg/L	5 µg/L
Vinyl acetate	< 50 µg/L	50 µg/L
Vinyl chloride	< 10 µg/L	10 µg/L
Total Xylenes	< 5 µg/L	5 µg/L

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1556 (Page 1 of 3)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31630

SAMPLE ID: Soil, 39325 4-22-92 10:20

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1556 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31630

SAMPLE ID: Soil, 39325 4-22-92 10:20

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1556 (Page 3 of 3) **Date: 5/11/92 M2**

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31630 **SAMPLE ID: Soil, 39325 4-22-92 10:20**

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g	2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g	2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g	4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g	4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g	Pentachlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g			

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1557 (Page 1 of 3)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

RECEIVED
MAY 12 1992
HWS

Date Received: 4-28-92

LAB NUMBER: 31631

SAMPLE ID: Soil, 39326 4-22-92 11:42

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1557 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31631

SAMPLE ID: Soil, 39326 4-22-92 11:42

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1557 (Page 3 of 3) **Date: 5/11/92** M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31631 **SAMPLE ID: Soil, 39326 4-22-92 11:42**

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g	2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g	2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g	4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g	4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g	Pentachlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g			

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1558 (Page 1 of 3)

Date: 5/11/92 (m2)

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

SUBJECT: Volatile Organics Analysis - Method 8240

Date Received: 4-28-92

RECEIVED
MAY 12 1992
HWS

LAB NUMBER: 31632

SAMPLE ID: Soil, 39327 4-22-92 14:20

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1558 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31632

SAMPLE ID: Soil, 39327 4-22-92 14:20

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1558 (Page 3 of 3) **Date: 5/11/92** M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31632

SAMPLE ID: Soil, 39327 4-22-92 14:20

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g	2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g	2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g	4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g	4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g	Pentachlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g			

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1546 (Page 1 of 3) **Date: 5/11/92** (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

RECEIVED
MAY 12 1992
HWS

LAB NUMBER: 31633 **SAMPLE ID: Soil, 39328 4-20-92 10:50**

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1546 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31633

SAMPLE ID: Soil, 39328 4-20-92 10:50

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1546 (Page 3 of 3) **Date: 5/11/92 M2**

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31633

SAMPLE ID: Soil, 39328 4-20-92 10:50

Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g
2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
Pentachlorophenol	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1547 (Page 1 of 3)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

RECEIVED
MAY 12 1992
HWS

Date Received: 4-28-92

LAB NUMBER: 31634

SAMPLE ID: Soil, 39329 4-20-92 11:30

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1547 (Page 2 of 3) **Date: 5/11/92** M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31634 **SAMPLE ID: Soil, 39329 4-20-92 11:30**

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	< 0.33 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1547 (Page 3 of 3)

Date: 5/11/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31634

SAMPLE ID: Soil, 39329 4-20-92 11:30

Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g
2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
Pentachlorophenol	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1548 (Page 1 of 3) **Date: 5/11/92** (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

RECEIVED
MAY 12 1992
HWS

LAB NUMBER: 31635

SAMPLE ID: Soil, 39330 4-20-92 14:00

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1548 (Page 2 of 3)

Date: 5/11/92 M2

SUBJECT: Base Neutral Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31635

SAMPLE ID: Soil, 39330 4-20-92 14:00

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	0.41 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1548 (Page 3 of 3) **Date: 5/11/92** M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31635

SAMPLE ID: Soil, 39330 4-20-92 14:00

Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g
2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
Pentachlorophenol	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1549 (Page 1 of 3) **Date: 5/11/92** (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

RECEIVED
MAY 12 1992
HWS

Date Received: 4-28-92

LAB NUMBER: 31636 **SAMPLE ID: Soil, 39331 4-20-92 14:30**

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1549 (Page 2 of 3)

Date: 5/11/92 M2

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

SUBJECT: ***Base Neutral Extractables - Soil***

Date Received: 4-28-92

LAB NUMBER: 31636

SAMPLE ID: Soil, 39331 4-20-92 14:30

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 3.3 µg/g	3.3 µg/g
1,3-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,4-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
1,2-Dichlorobenzene	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroisopropyl) ether	< 3.3 µg/g	3.3 µg/g
N-Nitroso-di-n-propylamine	< 3.3 µg/g	3.3 µg/g
Hexachloroethane	< 3.3 µg/g	3.3 µg/g
Nitrobenzene	< 3.3 µg/g	3.3 µg/g
Isophorone	< 3.3 µg/g	3.3 µg/g
Bis(2-chloroethoxy)methane	< 3.3 µg/g	3.3 µg/g
1,2,4-Trichlorobenzene	< 3.3 µg/g	3.3 µg/g
Naphthalene	< 3.3 µg/g	3.3 µg/g
Hexachlorobutadiene	< 3.3 µg/g	3.3 µg/g
2-Chloronaphthalene	< 3.3 µg/g	3.3 µg/g
Dimethyl phthalate	< 3.3 µg/g	3.3 µg/g
Acenaphthylene	< 3.3 µg/g	3.3 µg/g
2,6-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
Acenaphthene	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrotoluene	< 3.3 µg/g	3.3 µg/g
4-Chlorophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Fluorene	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 3.3 µg/g	3.3 µg/g
4-Bromophenyl phenyl ether	< 3.3 µg/g	3.3 µg/g
Hexachlorobenzene	< 3.3 µg/g	3.3 µg/g
Phenanthrene	< 3.3 µg/g	3.3 µg/g
Anthracene	< 3.3 µg/g	3.3 µg/g
Di-n-butyl phthalate	< 3.3 µg/g	3.3 µg/g
Fluoranthene	< 3.3 µg/g	3.3 µg/g
Pyrene	< 3.3 µg/g	3.3 µg/g
Butyl benzyl phthalate	< 3.3 µg/g	3.3 µg/g
3,3'-Dichlorobenzidine	< 6.6 µg/g	6.6 µg/g
Chrysene	< 3.3 µg/g	3.3 µg/g
Benzo(a)anthracene	< 3.3 µg/g	3.3 µg/g
Bis(2-ethylhexyl) phthalate	< 3.3 µg/g	3.3 µg/g
Di-n-octyl phthalate	< 3.3 µg/g	3.3 µg/g
Benzo(b)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(k)fluoranthene	< 3.3 µg/g	3.3 µg/g
Benzo(a)pyrene	< 3.3 µg/g	3.3 µg/g
Indeno(1,2,3-cd)pyrene	< 3.3 µg/g	3.3 µg/g
Dibenz(a,h)anthracene	< 3.3 µg/g	3.3 µg/g
Benzo(g,h,i)perylene	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1549 (Page 3 of 3)

Date: 5/11/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31636

SAMPLE ID: Soil, 39331 4-20-92 14:30

Analysis	Level Found	Det. Limit
Phenol	< 3.3 µg/g	3.3 µg/g
2-Chlorophenol	< 3.3 µg/g	3.3 µg/g
2-Nitrophenol	< 3.3 µg/g	3.3 µg/g
2,4-Dimethylphenol	< 3.3 µg/g	3.3 µg/g
2,4-Dichlorophenol	< 3.3 µg/g	3.3 µg/g
4-Chloro-3-methylphenol	< 3.3 µg/g	3.3 µg/g

Analysis	Level Found	Det. Limit
2,4,6-Trichlorophenol	< 3.3 µg/g	3.3 µg/g
2,4-Dinitrophenol	< 16.6 µg/g	16.6 µg/g
4-Nitrophenol	< 8.3 µg/g	8.3 µg/g
4,6-Dinitro-2-methylphenol	< 3.3 µg/g	3.3 µg/g
Pentachlorophenol	< 3.3 µg/g	3.3 µg/g

Note: < = Less than

Comment: Normal detection limits could not be attained due to interfering compounds.

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1550 (Page 1 of 2)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

RECEIVED
MAY 12 1992
HWS

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31637

SAMPLE ID: Soil, 39332 4-20-92 11:20

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	< 0.33 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1550 (Page 2 of 2)

Date: 5/11/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31637

SAMPLE ID: Soil, 39332 4-20-92 11:20

Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g
2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
Pentachlorophenol	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1551 (Page 1 of 2)

Date: 5/11/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31638

SAMPLE ID: Soil, 39333 4-21-92 15:05

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	< 0.33 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-132-1551 (Page 2 of 2)

Date: 5/11/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-92

LAB NUMBER: 31638

SAMPLE ID: Soil, 39333 4-21-92 15:05

Analysis	Level Found	Det. Limit	Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g	2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g	2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g	4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g	4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g	Pentachlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g			

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1501 (Page 1 of 2)

Date: 5/8/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31639

SAMPLE ID: 39334, 4-21-92 1645

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	< 0.33 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

RECEIVED
MAY 11 1992
HWS

REPORT NUMBER: 2-129-1501 (Page 2 of 2)

Date: 5/8/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68501

Date Received: 4-28-91

LAB NUMBER: 31639

SAMPLE ID: 39334, 4-21-92 1645

Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g
2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
Pentachlorophenol	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1502 (Page 1 of 2) **Date: 5/8/92** (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31640

SAMPLE ID: 39335, 4-21-92 1814

Analysis	Level Found	Det. Limit
Bis(2-chloroethyl) ether	< 0.33 µg/g	0.33 µg/g
1,3-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,4-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
1,2-Dichlorobenzene	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroisopropyl) ether	< 0.33 µg/g	0.33 µg/g
N-Nitroso-di-n-propylamine	< 0.33 µg/g	0.33 µg/g
Hexachloroethane	< 0.33 µg/g	0.33 µg/g
Nitrobenzene	< 0.33 µg/g	0.33 µg/g
Isophorone	< 0.33 µg/g	0.33 µg/g
Bis(2-chloroethoxy)methane	< 0.33 µg/g	0.33 µg/g
1,2,4-Trichlorobenzene	< 0.33 µg/g	0.33 µg/g
Naphthalene	< 0.33 µg/g	0.33 µg/g
Hexachlorobutadiene	< 0.33 µg/g	0.33 µg/g
2-Chloronaphthalene	< 0.33 µg/g	0.33 µg/g
Dimethyl phthalate	< 0.33 µg/g	0.33 µg/g
Acenaphthylene	< 0.33 µg/g	0.33 µg/g
2,6-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
Acenaphthene	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrotoluene	< 0.33 µg/g	0.33 µg/g
4-Chlorophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Fluorene	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
Diethyl phthalate	< 0.33 µg/g	0.33 µg/g
4-Bromophenyl phenyl ether	< 0.33 µg/g	0.33 µg/g
Hexachlorobenzene	< 0.33 µg/g	0.33 µg/g
Phenanthrene	< 0.33 µg/g	0.33 µg/g
Anthracene	< 0.33 µg/g	0.33 µg/g
Di-n-butyl phthalate	< 0.33 µg/g	0.33 µg/g
Fluoranthene	< 0.33 µg/g	0.33 µg/g
Pyrene	< 0.33 µg/g	0.33 µg/g
Butyl benzyl phthalate	< 0.33 µg/g	0.33 µg/g
3,3'-Dichlorobenzidine	< 0.66 µg/g	0.66 µg/g
Chrysene	< 0.33 µg/g	0.33 µg/g
Benzo(a)anthracene	< 0.33 µg/g	0.33 µg/g
Bis(2-ethylhexyl) phthalate	< 0.33 µg/g	0.33 µg/g
Di-n-octyl phthalate	< 0.33 µg/g	0.33 µg/g
Benzo(b)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(k)fluoranthene	< 0.33 µg/g	0.33 µg/g
Benzo(a)pyrene	< 0.33 µg/g	0.33 µg/g
Indeno(1,2,3-cd)pyrene	< 0.33 µg/g	0.33 µg/g
Dibenz(a,h)anthracene	< 0.33 µg/g	0.33 µg/g
Benzo(g,h,i)perylene	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1502 (Page 2 of 2)

Date: 5/8/92 M2

SUBJECT: Acid Extractables - Soil

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31640

SAMPLE ID: 39335, 4-21-92 1814

Analysis	Level Found	Det. Limit
Phenol	< 0.33 µg/g	0.33 µg/g
2-Chlorophenol	< 0.33 µg/g	0.33 µg/g
2-Nitrophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dimethylphenol	< 0.33 µg/g	0.33 µg/g
2,4-Dichlorophenol	< 0.33 µg/g	0.33 µg/g
4-Chloro-3-methylphenol	< 0.33 µg/g	0.33 µg/g

Analysis	Level Found	Det. Limit
2,4,6-Trichlorophenol	< 0.33 µg/g	0.33 µg/g
2,4-Dinitrophenol	< 1.66 µg/g	1.66 µg/g
4-Nitrophenol	< 0.83 µg/g	0.83 µg/g
4,6-Dinitro-2-methylphenol	< 0.33 µg/g	0.33 µg/g
Pentachlorophenol	< 0.33 µg/g	0.33 µg/g

Note: < = Less than

Respectfully submitted,

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1503

Date: 5/8/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31641

SAMPLE ID: 39336, 4-21-92, 1120

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	<2000 µg/g	2000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1504

Date: 5/8/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31642

SAMPLE ID: 39337, 4-21-92, 1125

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	<2000 µg/g	2000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-129-1505

Date: 5/8/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31643

SAMPLE ID: 39338, 4-21-92, 1505

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	<2000 µg/g	2000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

RECEIVED
MAY 11 1992
HWS

REPORT NUMBER: 2-129-1506

Date: 5/8/92 (m2)

SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies Inc. #1170
825 J Street - Box 80358
Lincoln, NE 68508-2958

Date Received: 4-28-91

LAB NUMBER: 31644

SAMPLE ID: 39339, 4-21-92, 1509

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	<2000 µg/g	2000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 5.0 µg/g	5.0 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 5.0 µg/g	5.0 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 5.0 µg/g	5.0 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

The above analytical results apply only to the sample (s) submitted.

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

JAN 1992

HWS

REPORT NUMBER: 2-127-1523

Date: 5/6/92 (m1)
SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4/28/92

LAB NUMBER 31645

SAMPLE ID: Soil 39340 4/21/92 16:45

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

RECEIVED
MAY 07 1992
HWS

REPORT NUMBER: 2-127-1524

Date: 5/6/92 (m1)
SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4/28/92

LAB NUMBER 31646

SAMPLE ID: Soil 39341 4/21/92 16:50

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

A&L MID WEST LABORATORIES, INC.
13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

REPORT NUMBER: 2-127-1525

Date: 5/6/92 (m1)
SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4/28/92

LAB NUMBER 31647

SAMPLE ID: Soil 39342 4/21/92 18:14

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

MAY 11 / 1992
HWS

REPORT NUMBER: 2-127-1526

Date: 5/6/92 (m1)
SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4/28/92

LAB NUMBER 31648

SAMPLE ID: Soil 39343 4/21/92 18:20

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

Dedicated Exclusively to Providing Quality Analytical Services

A&L MID WEST LABORATORIES, INC.

13611 "B" STREET • OMAHA, NE 68144 • (402) 334-7770

RECEIVED
MAY 07 1992
HWS

REPORT NUMBER: 2-127-1527

Date: 5/6/92 (m1)
SUBJECT: Volatile Organics Analysis - Method 8240

HWS Technologies #1170
825 J Street
Box 80358
Lincoln, NE 68508-2958

Date Received: 4/28/92

LAB NUMBER 31649

SAMPLE ID: Soil 39344 4/21/92

Analysis	Level Found	Det. Limit
Acetone	< 40 µg/g	40 µg/g
Acrolein	< 40 µg/g	40 µg/g
Acrylonitrile	< 40 µg/g	40 µg/g
Benzene	< 2 µg/g	2 µg/g
Bromodichloromethane	< 2 µg/g	2 µg/g
Bromoform	< 2 µg/g	2 µg/g
Bromomethane	< 4 µg/g	4 µg/g
2-Butanone (Methyl ethyl ketone)	< 40 µg/g	40 µg/g
Carbon disulfide	< 2 µg/g	2 µg/g
Carbon tetrachloride	< 2 µg/g	2 µg/g
Chlorobenzene	< 2 µg/g	2 µg/g
Chlorodibromomethane	< 2 µg/g	2 µg/g
Chloroethane	< 4 µg/g	4 µg/g
2-Chloroethyl vinyl ether	< 4 µg/g	4 µg/g
Chloroform	< 2 µg/g	2 µg/g
Chloromethane	< 4 µg/g	4 µg/g
Dibromomethane	< 2 µg/g	2 µg/g
Total 1,4-Dichlorobutene	< 2 µg/g	2 µg/g
Dichlorodifluoromethane	< 2 µg/g	2 µg/g
1,1-Dichloroethane	< 2 µg/g	2 µg/g
1,2-Dichloroethane	< 2 µg/g	2 µg/g
1,1-Dichloroethene	< 2 µg/g	2 µg/g
Tetrachloroethene	< 2 µg/g	2 µg/g

Analysis	Level Found	Det. Limit
Total 1,2-Dichloroethene	< 2 µg/g	2 µg/g
1,2-dichloropropane	< 2 µg/g	2 µg/g
cis-1,3-Dichloropropene	< 2 µg/g	2 µg/g
trans-1,3-Dichloropropene	< 2 µg/g	2 µg/g
Ethanol	< 2,000 µg/g	2,000 µg/g
Ethylbenzene	< 2 µg/g	2 µg/g
Ethyl methacrylate	< 2 µg/g	2 µg/g
2-Hexanone	< 20 µg/g	20 µg/g
Iodomethane	< 2 µg/g	2 µg/g
Methylene chloride	< 2 µg/g	2 µg/g
4-Methyl-2-pentanone	< 20 µg/g	20 µg/g
Styrene	< 2 µg/g	2 µg/g
1,1,2,2-Tetrachloroethane	< 2 µg/g	2 µg/g
Toluene	< 2 µg/g	2 µg/g
1,1,1-trichloroethane	< 2 µg/g	2 µg/g
1,1,2-trichloroethane	< 2 µg/g	2 µg/g
Trichloroethene	< 2 µg/g	2 µg/g
Trichlorofluoromethane	< 2 µg/g	2 µg/g
1,2,3-Trichloropropane	< 2 µg/g	2 µg/g
Vinyl acetate	< 20 µg/g	20 µg/g
Vinyl chloride	< 4 µg/g	4 µg/g
Total Xylenes	< 2 µg/g	2 µg/g

Note: < = Less than

Candy Humphrey

Candy Humphrey, GC/MS Supervisor

TABLE 1 - Lockwood RFI workplan

Appendix A: Examples of Concentrations Meeting Criteria for Action Levels
(Section 264.521(a)(2)(i-iv))

Constituent Name	Class	Air (ug/m^3)	Water (mg/L)	Soils (mg/kg)
Acetone	D	-	4E-00	9E+03
Acetonitrile	D	-	2E-01	5E+02
Acetophenone	D	2E-01	4E-00	8E+03
Acrylamide	B2	8E-04	8E-06	2E-01
Acrylonitrile	B1	1E-02	6E-05	1E-00
Aldicarb	D	-	5E-02	1E+02
Aldrin	B2	2E-04	2E-06	4E-02
Allyl alcohol	D	-	2E-01	4E+02
Aluminum phosphide	D	-	1E-02	3E+01
Aniline	B2	-	6E-03	1E+02
Antimony	D	-	1E-02	3E+01
Arsenic	A	7E-05	(1)	8E+01
Asbestos (2)	A	2E-02	-	-
Barium cyanide	D	-	2E-00	6E+03
Barium, ionic	D	4E-01	(1)	4E+03
Benzidine	A	2E-05	2E-07	3E-03
Beryllium	B2	4E-04	8E-06	2E-01
Bis(2-ethylhexyl)phthlate	B2	-	3E-03	5E+01
Bis(chloroethyl)ether	B2	3E-03	3E-05	6E-01
Bromodichloromethane (3)	B2	-	3E-05	5E-01
Bromoform (3)	D	-	7E-01	2E+03
omethane	D	3E+01	5E-02	1E+02
l benzyl phthalate	C	-	7E-00	2E+04
Cadmium	B1	6E-04	(1)	4E+01
Calcium cyanide	D	-	1E-00	3E+03
Carbon disulfide	D	-	4E-00	8E+03
Carbon tetrachloride	B2	3E-02	3E-04	5E-00
Chloral	D	-	7E-02	2E+02
Chlordane	B2	3E-03	3E-05	5E-01
Chlorine cyanide	D	-	2E-00	4E+03
Chlorobenzene	D	2E+01	7E-01	2E+03
Chloroform (3)	B2	4E-02	6E-03	1E+02
2-Chlorophenol	D	-	2E-01	4E+02
Chromium (VI)	A	9E-05	(1)	4E+02
Copper cyanide	D	-	2E-01	4E+02
m-Cresol	D	-	2E-00	4E+03
o-Cresol	D	-	2E-00	4E+03
p-Cresol	D	-	2E-00	4E+03
Cyanide	D	-	7E-01	2E+03
Cyanogen	D	-	1E-00	3E+03
Cyanogen bromide	D	-	3E-00	7E+03
DDD	B2	-	1E-04	3E-00
DDE	B2	-	1E-04	2E-00
DDT	B2	1E-02	1E-04	2E-00
Dibutyl phthalate	D	-	4E-00	8E+03
Dibutylnitrosamine	B2	6E-04	6E-06	1E-01
Dichlorobenzidine	B2	-	8E-05	2E-00

* Detection levels should be comparable to those required by U.S. EPA's Contract Laboratory Program (CLP).

Appendix A: Examples of Concentrations Meeting Criteria for Action Levels
(Section 264.521(a)(2)(i-iv))

Constituent Name	Class	Air (ug/m^3)	Water (mg/L)	Soils (mg/kg
Dichlorodifluoromethane	D	2E+02	7E-00	2E+04
1,2-Dichloroethane	B2	4E-02	(1)	8E-00
1,1-Dichloroethylene	C	3E-02	(1)	1E+01
2,4-Dichlorophenol	D	-	1E-01	2E+02
2,4-Dichlorophenoxyacetic acid	D	-	4E-01	8E+02
1,3-Dichloropropene	B2	-	1E-02	2E+01
Dieldrin	B2	2E-04	2E-06	4E-02
Diethyl phthalate	D	-	3E+01	6E+04
Diethylnitrosamine	B2	2E-05	2E-07	5E-03
Dimethoate	D	-	7E-01	2E+03
Dimethylnitrosamine	B2	7E-05	7E-07	1E-02
m-Dinitrobenzene	D	-	4E-03	8E-00
2,4-Dinitrophenol	D	-	7E-02	2E+02
2,3-Dinitrotoluene (and 2,6-, mixture)	B2	-	5E-05	1E-00
1,4-Dioxane	B2	-	3E-03	6E+01
Diphenylamine	D	-	9E-01	2E+03
1,2-Diphenylhydrazine	B2	4E-03	4E-05	9E-01
Disulfoton	D	-	1E-03	3E-00
Endosulfan	D	-	2E-03	4E-00
Endothall	D	-	7E-01	2E+03
Endrin	D	-	(1)	2E+01
[illegible]-hlorohydrin	B2	8E-01	4E-03	7E+01
[illegible]benzene	D	-	4E-00	8E+03
[illegible]ylene dibromide	B2	5E-03	4E-07	8E-03
Formaldehyde	B1	8E-02	-	-
Formic acid	D	-	7E+01	2E+05
Glycidyaldehyde	D	-	1E-02	3E+01
Heptachlor	B2	8E-04	8E-06	2E-01
Heptachlor epoxide	B2	4E-04	4E-06	8E-02
Hexachlordibenzo-p-dioxin	B2	6E-07	1E-08	1E-04
Hexachlorobutadiene	C	4E-01	4E-03	9E+01
alpha-Hexachlorocyclohexane	B2	6E-04	6E-06	1E-01
beta-Hexachlorocyclohexane	C	2E-02	2E-04	4E-00
Hexachlorocyclopentadiene	D	7E-02	2E-01	6E+02
Hexachloroethane	C	3E-00	3E-02	8E+01
Hexachlorophene	D	-	1E-02	2E+01
Hydrazine	B2	2E-04	1E-05	2E-01
Hydrogen cyanide	D	-	7E-01	2E+03
Hydrogen sulfite	D	-	1E-01	2E+02
Isobutyl alcohol	D	-	1E+01	2E+04
Isophorone	C	-	[illegible]E-02	2E+03
Lead	B2	-	(1)	-
Lindane (gamma-hexachlorocyclohexane)	B2/C	-	(1)	5E-01
m-Phenylenediamine	D	-	2E-01	5E+02
Maleic anhydride	D	-	4E-00	8E+03
Maleic hydrazide	D	-	2E+01	4E+04
[illegible]ury (inorganic)	D	-	(1)	2E+01

Appendix A: Examples of Concentrations Meeting Criteria for Action Levels
(Section 264.521(a)(2)(i-iv))

Constituent Name	Class	Air (ug/m^3)	Water (mg/L)	Soils (mg/kg)
Methacrylonitrile	D	7E-01	4E-03	8E-00
Methomyl	D	-	9E-01	2E+03
Methyl chlorocarbonate	D	-	-	-
Methyl ethyl ketone	D	3E+02	2E-00	4E+03
Methyl isobutyl ketone	D	7E+01	2E-00	4E+03
Methyl parathion	D	-	9E-03	2E+01
Methylene chloride	B	3E-01	5E-03	9E+01
n-Nitroso-di-n-butylamine	B2	6E-04	6E-06	1E-01
n-Nitroso-n-ethylurea	B	-	-	-
n-Nitroso-n-methylethylamine	B2	-	2E-06	3E-02
n-Nitrosodi-n-propylamine	B2	-	5E-06	1E-01
n-Nitrosodiethanolamine	B2	-	1E-05	3E-01
n-Nitrosodiphenylamine	B2	-	7E-03	1E+02
n-Nitrosopyrrolidine	B2	2E-03	2E-05	3E-01
Nickel	D	-	7E-01	2E+03
Nickel refinery dust	A	4E-03	-	-
Nitric oxide	D	-	4E-00	8E+03
Nitrobenzene	D	2E-00	2E-02	4E+01
Nitrogen dioxide	D	-	4E+01	8E+04
Osmium tetroxide	D	-	4E-04	8E-01
Parathion	C	-	2E-01	5E+02
achlorobenzene	D	-	3E-02	6E+01
ichloronitrobenzene	C	1E-01	1E-01	2E+02
entachlorophenol	D	-	1E-00	2E+03
Phenol	D	-	2E+01	5E+04
Phenyl mercuric acetate	D	-	3E-03	6E-00
Phosphine	D	-	1E-02	2E+01
Phthalic anhydride	D	-	7E+01	2E+05
Polychlorinated biphenyls	B2	-	5E-06	9E-02
Potassium cyanide	D	-	2E-00	4E+03
Potassium silver cyanide	D	-	7E-00	2E+04
Pronamide	D	-	3E-00	6E+03
Pyridine	D	-	4E-02	8E+01
Selenious acid	D	-	1E-01	2E+02
Selenourea	D	-	2E-01	4E+02
Silver	D	-	(1)	2E+02
Silver cyanide	D	-	4E-00	8E+03
Sodium cyanide	D	-	1E-00	3E+03
Strychnine	D	-	1E-02	2E+01
Styrene	C	-	7E-00	2E+04
1,1,1,2-Tetrachlorethane	C	1E-00	1E-02	3E+02
1,2,4,5-Tetrachlorobenzene	D	-	1E-02	2E+01
1,1,1,2-Tetrachloroethane	C	1E-00	1E-02	3E+02
1,1,2,2-Tetrachloroethane	C	2E-01	2E-03	4E+01
Tetrachloroethylene	B2	1E-00	7E-04	1E+01
2,3,4,6-Tetrachlorophenol	D	-	1E-00	2E+03
ethyl lead	D	-	4E-06	8E-03

Appendix A: Examples of Concentrations Meeting Criteria for Action Levels
(Section 264.521(a)(2)(i-iv))

stituent Name	Class	Air (ug/m^3)	Water (mg/L)	Soils (mg/kg)
Tetraethyldithiopyrophosphate	D	-	2E-02	4E+01
Thallic oxide	D	-	2E-03	6E-00
Thallium acetate	D	-	3E-03	7E-00
Thallium carbonate	D	-	3E-03	6E-00
Thallium chloride	D	-	3E-03	6E-00
Thallium nitrate	D	-	3E-03	7E-00
Thallium sulfate	D	-	3E-03	6E-00
Thiosemicarbazide	D	-	2E-01	5E+02
Thiram	D	-	2E-01	4E+02
Toluene	D	7E+03	1E+01	2E+04
Toxaphene	B2	3E-03	(1)	6E-01
1,2,4-Trichlorobenzene	D	1E+01	7E-01	2E+03
1,1,1-Trichloroethane	D	1E+03	3E-00	7E+03
1,1,2-Trichloroethane	C	6E-01	6E-03	1E+02
Trichloroethylene	B2	-	(1)	6E+01
Trichloromonofluoromethane	D	7E+02	1E+01	2E+04
2,4,5-Trichlorophenol	D	-	4E-00	8E+03
2,4,6-Trichlorophenol	B2	2E-01	2E-03	4E+01
2,4,5-Trichlorophenoxyacetic acid	D	-	(1)	8E+02
1,2,3-Trichloropropane	D	-	2E-01	5E+02
Vanadium pentoxide	D	-	3E-01	7E+02
nes	D	1E+03	7E+01	2E+05
cyanide	D	-	2E-00	4E+03
nc phosphide	D	-	1E-02	2E+01

(1) MCL available; see Appendix B.

(2) The air action level for asbestos is measured in units of fibers/milliliters.

(3) There is an MCL for total trihalomethanes, which includes four constituents: bromoform, bromodichloromethane, chloroform, and dibromochloromethane.

Concentration derived using exposure assumptions in Appendix D and reference doses for systemic toxicants and verified risk-specific doses at 10-6 for Class A and B carcinogens and 10-5 for Class C carcinogens (see section VI.F.2.6 for further discussion).

A, B and C represents class A, B and C carcinogens, respectively; D represents a systemic toxicant.